Drug & Cosmetic INDUSTRY

December 1942

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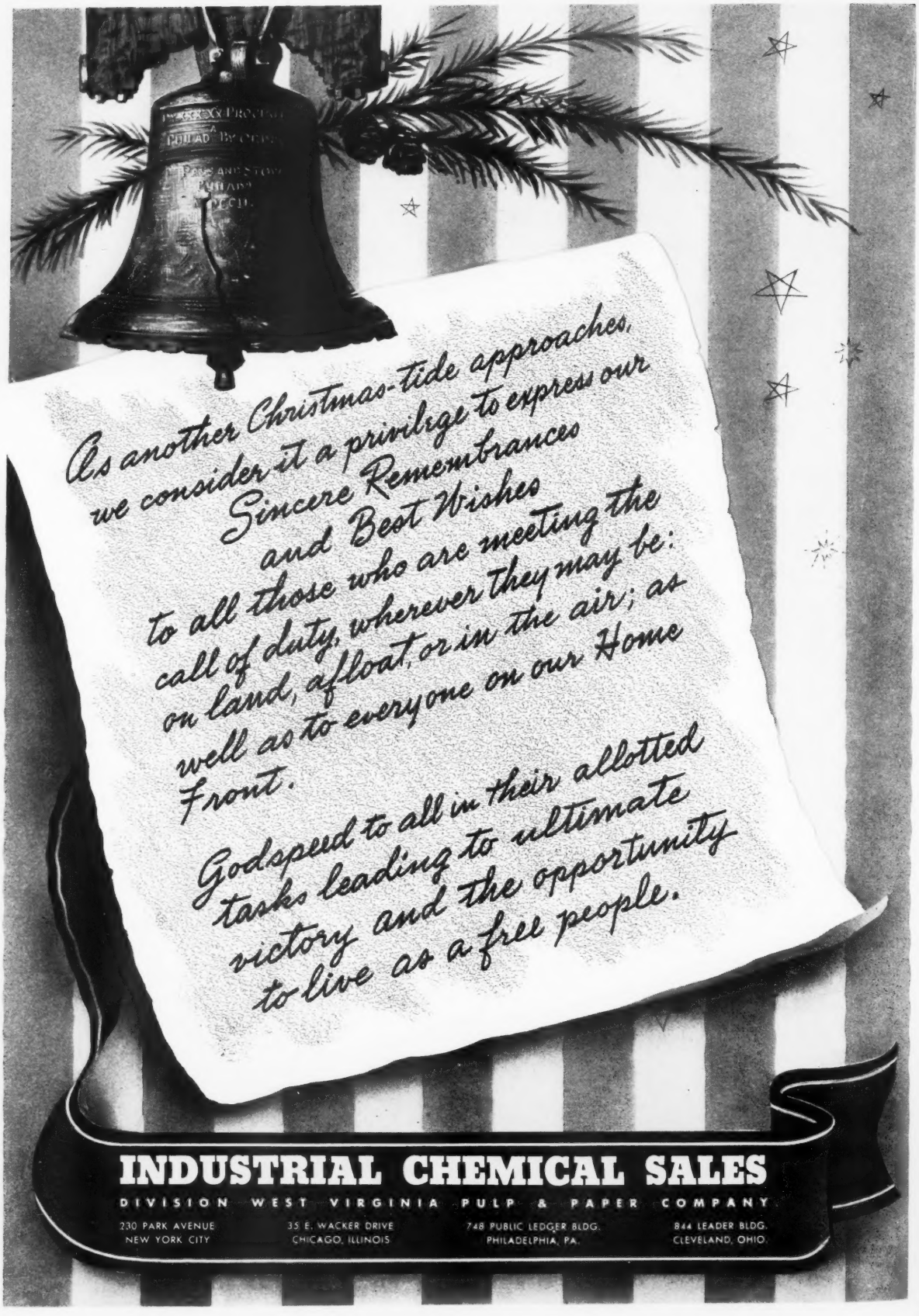
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Drug & Cosmetic INDUSTRY

DECEMBER 1942

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Front Cover

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KEEPING POSTED

U. S. Buys Vitamins

ENORMOUS supplies of vitamins are being acquired by the government for use for the armed forces of this country and our allies, as well as for civilians. Vitamin purchases by the Agricultural Marketing Administration during October, of which more than ninety per cent. were for allied requirements, amounted to $114,000,000, and approximately the same amount was bought in September. October purchases of vitamin A in the form of fish liver oils, aggregated 21,000,000,000,000 units, of a value of $3,167,000; purchases of vitamin B_1 (thiamin hydrochloride) totaled 7,965 kilograms, of a value of $4,057,000; purchases of vitamin C (ascorbic acid) totaled 60,923 pounds, of a value of $1,246,000. The vitamin A is being supplied in 55 gallon drums, and the vitamin B_1 is being shipped in 16 pound water-proof containers. The government states plainly that synthetic vitamin C is used in increasing amounts to prevent scurvy on fronts where fresh fruits and vegetables are difficult to obtain. Also it is stated that vitamin A, termed "the anti-blackout vitamin" is being used to prevent night blindness and lowered resistance to respiratory diseases. Vitamin C is being supplied in tablet form as well as in crystal form that can be mixed with food and distributed for medicinal and civilian use.

In addition to other vitamin supplies bought by the Agricultural Marketing Administration for government and Lend-Lease purposes, 350 grams of vitamin B_6 (pyridoxine hydrochloride) at two dollars per gram, and 336 pounds of nicotinic acid at five dollars per pound, were bought from one maker early last month.

No More Symbols

THE famous WPB Priorities Regulation No. 10 which required symbols on all orders for goods indicating the uses to which the goods were to be put, has been revoked. We wondered for a long time who was ever going to sort all this information and arrive at any sensible conclusions from it. But perhaps the WPB did get the information it was seeking. However, it is no longer necessary for this industry to put the symbol 12.20 on its orders.

Prices On Labels

RECENTLY the OPA issued an order fixing prices for certain new vitamin products of the Upjohn Company. Manufacturer, wholesale, and retail prices are fixed in the order. However, the OPA made an additional stipulation requiring that the packages carry the words "OPA Retail Ceiling Price" along with the price fixed by the order for each package. The letters used in this statement must be at least one-quarter as large as the letters used in the name of the product and they must be in a color that sharply contrasts with the background.

When this order was issued, perfume and cosmetic manufacturers were somewhat agitated lest they should have to do the same thing. The reason why the marking of perfumes and cosmetics with the prices would be objectionable is because of the fact that these products are often given as presents, and also because the very nature of the products makes prominent price marking upon them objectionable. When asked regarding this situation, OPA replied that perfumes and cosmetics could arrange so that the price marking would be removable by the purchaser. This is similar to the well-known tear-off labels used by drug manufacturers on products which are dispensed under prescriptions in their original packages or which are given to patients by dispensing physicians.

Prescription for Alcohol

RUBBING alcohol compound containing ethyl alcohol can no longer be bought without a prescription. This restriction on the part of the WPB is estimated to conserve 2,000,000 gallons of alcohol a year for the production of war necessities.

Less Cans for Crowns

WITH new detinning plants coming into operation, the WPB has tightened up on the use by beverage manufacturers of tin cans for production of bottle crown caps. Bottlers are now allowed to use for production of crowns only fifty per cent. of the cans of size No. 10 and larger. Since only about ten per cent. of the cans collected are of No. 10 size or larger, this means that the bottlers will be able to use only about five per cent. of the cans which they collect. All cans smaller than No. 10 must be prepared by the bottler, that is the top and bottom must be cut out, the body of the can must have its label removed, and the cans must be flattened and delivered to the detinning plants or local salvage committees.

Advertising Importance

WITH regard to the place that advertising plays in a war economy. WPB head Donald Nelson recently stated that it served the following uses:

"First, where a manufacturer continues to have goods to sell to the civilian market, advertising has the same role, it always had—to help him sell them.

"Second, the manufacturer who is now selling his goods to the Government instead of to the civilian may still have a very proper need for advertising. He can very usefully, for instance, tell

his former customers how to use and conserve and service the goods which he has previously sold them. Those goods in service may very well constitute the country's sole remaining stock of such articles—a stock which will have to do until the war ends. It is certainly right for the manufacturer to use advertising to help make that stock last.

"Then there are companies which, as far as the consuming public is concerned, are virtually out of business—either actually, or through conversion to war production. Where such a company expects to return to the civilian market after the war, it has a perfect right to use advertising to preserve its name and its good will. The Government fully recognizes the propriety of reasonable expenditures for advertising to preserve the value of those assets.

"Lastly, advertising has a very great usefulness as a means by which a company can participate directly in the war effort. Some extremely valuable work has been done by the national advertisers, the great advertising agencies and the various advertising media in supporting such things as the salvage drive, for example."

Vitamins in Meats

SENATOR Wheeler, co-author of the Wheeler-Lea Act which controls advertising, has complained to the National Livestock and Meat Board concerning the advertising of the vitamin content of various cuts of meat. Senator Wheeler wrote:

"I am advised that your organization is planning early distribution of a nutritional chart for the consuming public, setting forth the vitamin values of uncooked or raw meat in a manner calculated to represent the vitamin values cited as being for the meat when cooked.

"After all, we are not a nation of cannibals, and I suspect even the F. B. I. would be hard put in an attempt to locate an eater of raw pork or veal."

The claims that food producers generally have been making for vitamins contained in the foods have been misleading in many instances because of the fact that much of the vitamins contained in the raw foods are destroyed in the cooking process. Certainly drug manufacturers know how important it is that their labels or advertising tell the buyers exactly what they get when they take the product. The question of what goes into the product or what the potency was at some other time than when the customer takes it, is not the information required. The meat people would do well to act on Senator Wheeler's letter and study the provisions of the Food, Drug, and Cosmetic Act.

No New Deals

DEALS, often attacked as an outstanding trade evil, appears to be out for the duration. Price Leon Henderson recently warned manufacturers, wholesalers, and retailers against "tying sales plans" which require the purchaser to buy one article, usually more expensive, to get another which he desires. Cited as an example was the practice of forcing a retailer to take four 25c packages and three 50c or two dollar packages every time he wants a dozen ten cent packages. These deals and combination offers are expressly forbidden unless the identical proposition was a generally accepted trade practice in March, 1942.

Tight Chemicals

SOME indication of the relative tightness of chemical supplies is given in the WPB report on the allocation of supplies of various chemicals during November for the many uses to which they are put. The allocations reported do not include direct military needs. Allocations of interest to this industry are:

All applications for isobutyl and tertiary butyl alcohol were supplied in full; Anhydrous ammonia and aqua ammonia were denied for caramel coloring and household ammonia, but aqua ammonia was supplied in full for laboratory reagents and pharmaceuticals; ammonium sulfate was supplied in full for biologicals, pharmaceuticals, caramel coloring, and yeast; aromatic petroleum solvents were supplied in full for reagents, essential medicinal preparations, and hospital and industrial laboratory work; benzene was supplied in full for manufacture of phenol; caffeine was supplied in full for medicinals, and to the extent of 67 per cent. for beverages; all requests for calcium hypochlorite were supplied in full; castor oil was supplied for cosmetics to the extent of 50 per cent. of the September consumption, and for disinfectants to the extent of 80 per cent. of the applications; glycerine for drugs and pharmaceuticals was supplied in full for ratings A-la through A-lk, and to the extent of 56 per cent. for other ratings, for cosmetics supplies were 61 per cent., and for chemical manufacture applications were supplied in full for ratings A-10 or higher, and to the extent of 52 per cent. for other ratings; Lithium compounds were supplied to the extent of 8 per cent. to 41 per cent. on applications for pharmaceuticals; all naphthalene requests were supplied in full; phenol for salicylates was supplied to the extent of 70 per cent. of 1941 production, in full for medicinals rated A-9 or higher, to the extent of 70 per cent. for A-10 and A-9, to the extent of 50 per cent for disinfectants rated A-9 or A-10; phosphorus was supplied to the extent of 100 per cent. of consumption for first eight months of 1942 for monocalcium phosphate, ammonium phosphate, monosodium phosphate, and sodium acid pyro phosphate, and to the extent of 75 per cent. of consumption during the first eight months of 1942 for disodium phosphate, trisodium phosphate, tetra sodium pyro phosphate, soluble sodium hexa meta phosphate, and phosphoric acid; pyrethrum was supplied to the extent of 75 per cent. for agriculture, and 35 per cent. for civilian; dark orange was supplied in full for medicinals; theobromine was supplied in full for medicinals; toluol was supplied to the extent of 90 per cent. for medicinals.

Morgan Tops Chemical Branch

CHANGES in the WPB have resulted in Dr. D. P. Morgan being named the new head of the Chemicals Division. Dr. Morgan replaces Dr. E. W. Reid who has been advanced to position of director of the Commodities Bureau, which includes the chemicals, cork and asbestos, pulp and paper, printing and publishing, and container divisions. Note that it is now the Chemicals Division of the Commodities Bureau, of the WPB. It is no longer the Chemicals Branch. Naturally this does not change any of the personnel controlling this industry. J. W. Reynolds, of Easton, Pa., who has

served as assistant chief of the Chemicals Branch is now assistant chief of the Chemicals Division. Hugh Hughes, of Bloomfield, N. J., who was chief of the Aromatics and Intermediates Division of the Chemicals Branch, is now assistant to the director of the Commodities Bureau. W. Fletcher Twombly, of Reading, Mass., formerly analyst in the section, replaces Mr. Hughes as chief of the Aromatics and Intermediates Section.

No. 1-1071-POLF-5-NOBU-COS-WP

AS the result of testimony given by C. M. Van Kirk, vice-president of E. R. Squibb & Sons, regarding the activities of the OPA in setting ceiling prices for new drug products, the Congressional joint committee on reduction of non-essential Federal expenditures approved a resolution for a comprehensive investigation into the questionnaires, reports, and other "paper work" requirements now issuing in millions from the OPA, WPB, and numerous other government agencies. Mr. Van Kirk's testimony introduced to the committee members Form No. 1-1071-POLF-5-NOBU-COS-WP, a questionnaire title that looks like a typographical error, but which is issued to obtain the full details regarding new cosmetic and proprietary products.

With regard to an application for pricing of a new anti-pertussin serum, Mr. Van Kirk told the committee that the OPA "delayed for more than six weeks, and I finally had to call up and tell them that if there was no authority to go ahead granted in forty-eight hours I thought that I could prove that infants had died during the six weeks you have been pussyfooting around with this. The product was released the next day." Mr. Van Kirk, speaking for the American Drug Manufacturers' Association, said that drug manufacturers had made between 600 and 800 changes, either in formulas or packaging of their products, under government orders, and each change, even the substitution of a cork for a metal bottle cap, required a voluminous report.

John J. Feldman, assistant to the president of White Laboratories, said with reference to the vitamin products of his concern, that they had to make out similar reports —both monthly and quarterly—for the Fish and Wildlife Service and the Census Bureau, and must answer questionnaires covering the same general subject sent out by the Army-Navy Munitions Board. Mr. Feldman exhibited a four-foot OPA questionnaire and stated, "There seems to be a great duplication of effort in making out these questionnaires and replying to them."

Senator Vandenburg said, "It would take a combined Philadelphia lawyer and crystal gazer to answer some of these forms." Senator Byrd said that he had a report from the National Association of Manufacturers which showed that in the last three months eighty-nine companies had received 3,479 separate questionnaires or requests for reports of one kind or another, or an average of 164 for each company during the quarterly period. "It took those companies an average of 495,480 man-hours per year to comply with these requests," said Senator Byrd, "and a breakdown showed that 64 per cent. were duplicates in some degree, and 34 per cent. were outright duplicates."

Senator Vandenburg stated that much of the information demanded by the government is impossible to furnish, and thus the flood of questionnaires "strikes positive terror to the hearts of citizens who wish to be totally loyal yet who find their loyalties channeled into maddening inquisitions."

Study Curtailment

MANY raw materials and packaging materials are scarce and will become scarcer, while others that have not as yet been in scant supply will be curtailed within the coming months. It therefore behooves manufacturers to study the situation as it stands and as it looks for the future and see how far they can possibly go in curtailing the use of materials that are now critical or which will shortly become critical. It is possible in many instances to cut down the amount of alcohol, glycerine, phenol, and other materials without impairing the efficacy of products. In fact a reduction in the amount of some materials might even improve certain products in some respects. These investigations should be carried out as soon as possible so that the new formulas can be thoroughly checked for stability, efficacy, and other important aspects.

Likewise manufacturers should study their packaging problems now. They must realize that metals for containers and closures are practically out for the duration, except for use in the packaging of those essential and ethical drug products that cannot be otherwise packaged. With the rush to glass containers for foods and other products as the result of the shortage of cans, the capacity of glass manufacturers should soon be completely taken up and many manufacturers might not be able to get glass for many of their products. Manufacturers who package their products in private mold bottles should look forward to the time when these molds will wear out and cannot be replaced. When this time arrives, they will be forced to take standard size and shape bottles. Also it is possible that special mold bottles might be curtailed if it is found that these special molds produce bottles that consume greater quantities of glass than is necessary. It would be well for manufacturers to determine now whether or not the bottles that he is using are heavier than is necessary to insure safe delivery of his product.

Cosmetics for Forces

MANUFACTURERS of cosmetics are no longer able to obtain A-10 ratings for raw materials and packaging material to be used in production of goods sold to Post Exchanges of the Army and Marine Corps and Ships' Service Stores of the Navy. Priority Regulation No. 17 provides that A-10 ratings may not be extended to deliveries to military exchanges and service departments unless the item purchased is listed in Priorities-Allocation Instructions No. 12 issued by the Army and Navy Munitions Board. This would eliminate practically all cosmetic articles.

Glycerine Substitute

AMONG the developments to replace critical materials is the possible use of apple syrup as a substitute for glycerine in keeping tobacco products in a moistened condition.

Manpower Shortage

WHILE the manpower situation is becoming increasingly difficult, it will continue to do so with greater rapidity during the months that are immediately in front of us. Recently a high official of the Manpower Commission, in speaking before a group of furriers, stated that manpower should first be drawn from the manufacturers of non-essentials, and during the course of his talk he mentioned cosmetic and jewelry manufacturers. Here once again comes the possibility of officials in Washington deciding what is essential and what is non-essential among civilian needs. Here again rises the possibility of some reformer who is Washington only because he is using the war effort as a means of promoting social ideas that he has always been interested in and not for the sole purpose of obtaining victory for this Nation and her Allies. Would it not be possible for those opposed to proprietary medicines to take this opportunity to curtail the manufacture of such preparations as a step to aid the war effort? However, proprietary medicines should be in a favorable position to withstand such an attack at this time due to the great shortage of doctors. Cosmetic manufacturers likewise should be a favorable position as the question of civilian morale becomes increasing more important as our activity on the fighting fronts increases.

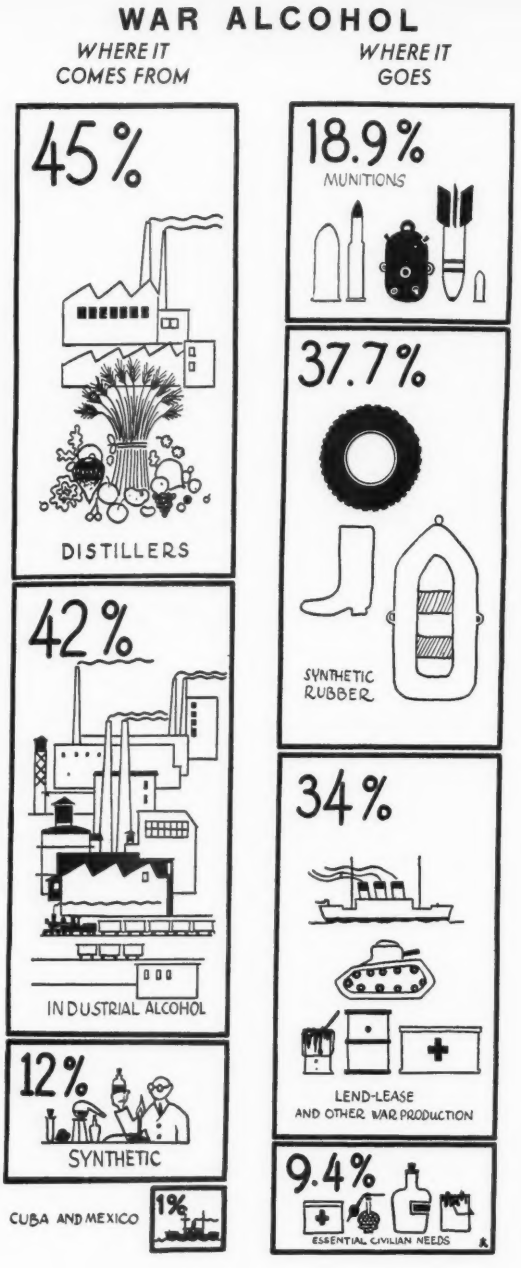
However, manufacturers should study the problem of replacing men that might be taken in the armed forces or who will leave to take higher paying and supposedly more patriotic positions in plants producing fighting equipment. The possibility of obtaining and carrying on with men beyond the draft age or with women should be seriously considered.

No Opium Production Here

PRODUCTION of opium in this country is not to be the purpose of the bill to license the growing of opium poppies in this country. Rather is the purpose to the contrary. We have plenty of opium in this country, and with the improved military situation in Africa, we should shortly be supplied to a still greater extent with the type of opium that is desired. However, there are people in this country from Yugoslavia and other parts of Europe who have brought in poppy seeds. The type of poppy plant that they could grow in this country is not high enough in yield of opium to interest narcotic manufacturers. However, this low yield material would be of interest to the illicit traffic in narcotics. Therefore, the bill, which gives the Secretary of the Treasury permission to license the growing of opium poppies in the United States, will prevent any such illicit traffic. Probably no licenses will be issued.

Viosterol Patent Released

THE Steenbock Viosterol process is now available for general use by pharmaceutical manufacturers. Up till now this process has been restricted to only six manufacturers,—Abbott, Mead Johnson, Merrell, Parke, Davis, Squibb, and Winthrop. The Wisconsin Alumni Research Foundation, holder of the patent covering the process, states that the change is made in the interest of public health, for fish liver oils are scarce and costly due to disruption of the domestic and foreign fishing industries by the war.



Some idea of great increase in production and demand for alcohol is given in the above drawing reproduced from the New York "Journal of Commerce." Synthetic rubber and munitions needs alone are taking 56.6 per cent. of the alcohol production, and these are needs which only developed since we have been at war. In addition, lease lend and other war production take 34 per cent., making a total of 90.6 per cent. of our alcohol going to fight the war. It can be seen how essential it is to have the distillers converted so that they can produce 45 per cent. of our alcohol output.

Paper To Be Cut

PAPER has become critical due to the loss of manpower to cut the wood and produce the pulp, as well as due to the competition for the wood for use in producing planes, ships, and other things directly needed for prosecution of the war effort. In addition, the government needs much of the pulp that is produced for use in making munitions. Therefore, it is possible that paper might be allowed for packaging only where necessary or where it is being used to replace metals or other materials that are unobtainable. Manufacturers should investigate the possibility of cutting down the weight of their cartons or of doing without cartons if that is possible. If the cartons are dispensed with, it is doubtful that any type of paper can be used to protect the label. Circulars packed with products should be studied from the point of view of eliminating them, cutting them in size, or lightening the weight of paper used in them. The value of the circulars should be studied from possible sales value, and from the point of view of material that must be in the labeling of a preparation to comply with the Federal, Food, Drug, and Cosmetic Act. The inclusion of various foreign languages in circulars might not be deemed essential. Display material should also be studied from the angle of the amount of displays that are necessary, as well as from the angle of the weight of board used in them. These studies should be conducted at once,—not because the curtailment is certain to be as drastic as these suggestions indicate—but because there is no telling how far the curtailment will go and it is far better to be prepared. For once the order is issued, it is essential that manufacturers have the information at hand so that they either appeal at one or take immediate steps to comply with the order that they know will not imperil their business.

Alcohol Cut Further

ALCOHOL for use in cosmetics and perfumes has been cut to fifty per cent of normal requirements under an amendment to General Preference Order M-30 issued December 3. The restriction now covers all cosmetics and toiletries and not the limited list of twelve important products contained in the original order. This means a cut from the previous amount of seventy per cent for the limited list of products, and a cut from 100 per cent for those products not contained in the original order. The amendment specifically states that manufacturers are allowed to use the alcohol they are entitled to receive in any products in any proportion. This means that a manufacturer can take the restricted amount of alcohol that he is entitled to receive and use it in only one product, if he so desires. In other words he can increase or decrease production of products at will. This was not included in the original order, but such an interpretation was given shortly after the original order was issued.

New Brand, Same Price

IN SOME fields, distributors have been merely changing the name of a commodity and selling it at an increased price. Therefore OPA has made the statement: "Merely changing the brand of a commodity does not change the commodity and consequently does not change the selling price for this commodity."

Medical Manpower

MEDICAL manpower in this country is placed at 129,000 effective physicians. This figure is arrived at in the following way: there are 176,000 doctors in the country according to the roster of the American Medical Association. Of these, 27,000 are over 65 years of age and only 33 per cent of them are efficient. Therefore, we take 18,000 away and have only 158,000. Another 15,000 have positions in laboratories and so on and do not treat patients, so this leaves 143,000. Another 2,000 are full time with the Army and Navy, and this brings the figure down to 141,000. There are 7,000 doctors who are having a year's training in medical schools, and this leaves 134,000. Another 5,000 doctors are residents who are staying on in medical schools and hospitals to become specialists, and this brings the figure down to 129,000. The Army has taken 40,000 doctors for an Army of four and one-half million, and will need 30,000 more to put the Army up to seven and one-half million. In the Army, there is a doctor to every one hundred men. In civilian life before the war, there was a doctor to every 975 people, while this will be reduced to 1 to 1,500 people or more.

Chemicals Wanted

A MEETING of the Chemical Plants Facilities Industry Advisory Committee of the WPB was held late last month for the purpose of obtaining information concerning present facilities which might be adapted for conversion to rapid manufacturing of various chemicals including ethyl cellulose, ethyl alcohol, dibutyl amine, ethyl aniline, furfural, mannitol, sorbitol, monochlorbenzene, phenol, thiokol, thiacetin, tricresyl phosphate, acetanilid, aluminum chloride, calcium carbide, calcium hypochlorite, dichlorethyl ether, silica gel, acrylinitrile, polyvinyl formaldehyde resins, and carbon black.

Oil Sources Reclaimed

WITH North Africa and Reunion Islands coming into the hands of the United Nations, the length of time that we shall be without important essentials appears to be considerably shortened. Morocco has pennyroyal, thyme, origanum, rue, and myrtle. Tunisia offers rosemary. Algeria offers African geranium, and neroli. Other products from North Africa include aromatic products such as oak moss, labdanum, fennel, and salvia. Reunion Island is our source of bourbon geranium, vetiver, ylang ylang, and bourbon vanilla beans. Madagascar, which is also under the control of the United Nations, also offers vanilla beans, geranium, and vetiver.

Glycerine to U. S. Lower

THE six big producers of glycerine—Armour Soap Works, Colgate-Palmolive-Peet Company, Harshaw Chemical Company, Lever Brothers, Procter & Gamble Company, and Swift & Company have, by voluntary agreement, reduced by one cent per pound the price charged the government for glycerine. Glycerine prices were reduced substantially this past October, but now they are cut further on government sales to 17½ cents per pound in tank cars for c. p. glycerine (98 per cent glycerol), 17¾ cents per pound for carloads of drums, and 18¼ cents per pound for less than carloads of drums.

The Supply Problem

THE real tightening of civilian goods still is ahead of us. But now that we have opened a second front with our troops in battle with the enemy in North Africa, the movement of supplies must be swift and in abundant supply. Many people cannot seem to understand why further curtailments of civilian goods are necessary. But when it is considered that we now have an army of approximately 5,000,000 men, and that an army of 7,500,000 men lies just ahead of us, the picture of supply looms very large. When it is considered that the Navy personnel will be raised to something around 2,000,000 men when the ships are ready, and when it is further realized that the armies of our allies must be given supplies as well as food, it can be seen why further curtailments are in order.

New York City has a population of about 7,000,000 men, women, and children of all races, colors, creeds, ages, and economic stages throughout its five boroughs. These people are spread out from the Bronx County line at the south end of Yonkers, down through the Bronx, through Harlem and Manhattan, across the East River to include the 2,000,000 or more in Brooklyn, then to the enormous area of Queens County which includes Long Island City, Jamaica, Forest Hills, Kew Gardens, the Rockaways, and numerous other places extending out as far as Valley Stream, then throughout Staten Island. The feeding and clothing, and otherwise caring for the people of greater New York is in itself a gigantic problem. But consider not only feeding, clothing, equipping for warfare an army of more than the total population of New York scattered all over the world, and you have some idea of the problem that confronts us in the months to come.

New Cosmetic Order?

RUMORS are current that definite curtailment of the products of the cosmetic industry are to be ordered within a short time. When and where this rumor originates is not clear. However, it is said that the government is not satisfied with the method now being used to control the output of cosmetics,—that is the restrictions surrounding raw materials and containers supplies. Therefore, according to this rumor, we would go back and again have a direct limitation order somewhat after the style of the abandoned L-171.

This seems hard to believe. The government apparently realized the uselessness and futility of issuing such an order and that is the reason why it was rescinded. If manufacturers are able to obtain sufficient raw materials, packaging supplies,—none of which are critical,—and in addition is able to obtain sufficient labor of the type not needed by the government, why should there be any objection to his manufacturing all the supplies he can? True it is that the raw materials, packaging supplies, and labor are going to be more difficult than ever to obtain within a very short time, but this will place a real restriction on the production of the industry without the government finding it necessary to issue any definite limitation order. After all, taxation and other restrictions on the amount of one's income that can be spent, together with the rising costs of food, clothing, and other essentials are not going to make the market for cosmetics too attractive for increased output.

OPA and Fair Trade

THE OPA is still fussing around about individual ceiling prices of retailers and the suggested prices of manufacturers of trade-marked articles. The latest suggestion from OPA states that:

"Dealers who rely on the statement of their supplier and use a selling price in excess of their proper ceiling price will be guilty of a violation. In such a case, the wholesaler or manufacturer will also be regarded as a violator on the ground that he has induced the violation by the retailer and is a participant in it.

"Consequently, suppliers will want to protect themselves. They will also desire to caution their customers. To do this it is suggested that they use a notice substantially as follows:

" 'Any retail price suggested by a supplier can be charged by the retail seller only in the event it does not exceed the *ceiling* price established by that individual seller for the item in question.' "

We fail to see what the OPA is accomplishing by all this. After all a manufacturer can sue a retailer who is cutting his prices suggested in his fair contracts and can obtain an injunction under the State Fair Trade Acts. After this injunction has been issued against a retailer, then the OPA will allow him to raise his ceiling price on the item to the proper level. We do not believe that anything worthwhile is accomplished by requiring this unnecessary litigation. If Fair Trade Contracts have been in force requiring certain prices, why cannot the retailer put his prices up without having to be sued?

Medicines by the Ton

ORDERS that are being placed for medicinals for the armed forces are so enormous that manufacturers are wondering when and where all this material is going to be used. Recently an order was placed for one type of product that will use 200 tons of calomel. The figures on vitamins, citrates, and the whole long list of products are such that medicinal items are being talked of much in the style of language used to discuss industrial chemicals.

Makers Can Name Prices

PRICING of new and changed products is being simplified by OPA to avoid the delay and difficulties which manufacturers of drugs and cosmetics have experienced. Under conditions as they have existed, manufacturers who changed their formulas or packages due to difficulty in getting critical materials were obliged to apply to the OPA for approval of prices on these changed products. Also prices of new products had to be approved by OPA. Under the new regulation, manufacturers who have changed their formulas, packages, or sizes may determine their own prices and then report them to OPA. If there is no objection from OPA within fifteen days, the submitted prices become the sanctioned prices. An OPA official explains:

"It is our purpose to maintain prices at March levels and also to maintain quantity and, in so far as possible, within the limits of our judgment, to maintain quality.

"Insignificant changes in closures such as changing from plastic to paper caps, or changing from metal containers to paper containers, will be given careful consideration and no special changes in price will be effected."

Essential Medicinals

THE essentiality of certain medicinal compounds derived from metallic salts has been determined by the National Research Council for WPB. The products are placed in three classifications: 1. Essential to civilian practice of medicine to extent of being practically indispensable; 2. Not indispensable but highly desirable if available; 3. Not essential to civilian practice of medicine. The list follows and should be studied by manufacturers to see if the chemicals used by them are included in the list and if they are in the proper classification if they are included.

"Medicinal chemicals listed below are divided into groups I and II; Group I consists of arsenic and bismuth compounds. Following the listing of each compound in group I is the essentiality rating on the following basis:

(1) Essential to the civilian practice of medicine to extent of being practically indispensable.

(2) Not indispensable but highly desirable if available.

(3) Not essential to civilian practice of medicine.

List I

Arsenic Compounds

Acetarsone (1), acetylarsan (3), ammonium arsenate (3), arsenic bromide (3), arsenic triiodide (N.F.) (3), arsenic trioxide (U.S.P.) (1), arsphenamine (U.S.P.) (1), bismuth sulfarsphenamine (1), carbarsone acid (U.S.P.) (1).

Also iron cacodylate (3), mapharsen (1), neoarsphenamine (U.S.P.) (1), sodium arsanilate (3), sodium arsenate, exsiccated (N.F.) (3), sodium cacodylate (U.S.P.) (3), sodium methyl-arsenate (3), solarson (3), solution arsenous acid (U.S.P.) (2).

Also solution arsenic and mercuric iodides (N.F.) (3), solution potassium arsenite (U.S.P.) (2) solution sodium arsenate (N.F.) (3), stryohnine arsenate (3), strychnine arsenite (3), sulfarsphenamine (U.S.P.) (2), quinine arsenite (3), silver arsphenamine (3), quinine arsenate (3), tryparsamide (U.S.P. (1).

Bismuth Compounds

Bismuth betanaphthol (3), bismuth citrate (3), bismuth glycerite (N.F.) (3), bismuth glycerite (N.F.) (3), bismuth lactate (3) bismuth magma (N.F.) (3), bismuth nitrate (3), bismuth oxide anhydride (3), bismuth oxychloride (3), bismuth and potassium tartrate (U.S.P.) (1).

Also *bismuth phosphate (3), bismuth salicylate* (3), bismuth sodium iodide (3), bismuth subcarbonate (U.S.P.) (1), *bismuth subiodide (3),* bismuth subnitrate (U.S.P.) (1) as substitute for bismuth subcarbonate.

Also bismuth subsalicylate (U.S.P.) (1), bismuth sulfocarbolate (3), *bismuth tannate (3),* bismuth tribromphenate (3), bismuth trichloride (3), *bismuth trioxide (3), bismuth and ammonium* citrates (3), bismuth oxylodide (3), quinine bismuth iodide (3), *subisminol (1), bisubgallate (3).*

Group II consists of aluminum, antimony, copper and magnesium metal and compounds. Those metals and compounds marked 1-A have been stated by the National Research Council to be essential to the maintenance of civilian health and those marked 1-B are considered important as intermediates in the manufacture of medicinals. All other compounds of aluminum, antimony, copper and magnesium are considered non-essential.

List II

Aluminum Compounds

1-A antimony and potassium tarminum chlorate; 1-A, aluminum hydroxide; 1-B, aluminum nitrate: important starting point and catalyst; 1-B, aluminum sulfate; 1-A, alum, potassium; 1-A, alum, ammonium; 1-B, aluminum chloride.

Antimony Compounds

1-A, antimony and potassium tartrate; 1-A, antimony sodium thioglycollate; 1-A, fuadin; 1-A, neostam; 1-A, antimony thioglycollamide.

Copper Compounds

1-A, cupric sulfate; 1-A, copper powder.

Magnesium Compounds

1-A, magnesium carbonate; 1-B, magnesium chloride.

1-A, magnesium citrate, 1-A magnesium hydroxide, 1-A magnesium oxide, 1-B magnesium peroxide, 1-B magnesium phosphate, dibasic, 1-A magnesium phosphate, tribasic, 1-B magnesium stearate, 1-A magnesium sulfate, 1-A magnesium trisilicate, 1-B magnesium turring.

Chemical Containers

WITH steel drums now sharply restricted, chemical manufacturers are experiencing difficulty obtaining substitutes. Production of fibre containers as substitutes for steel drums has reached the acute stage and supplies are insufficient to meet the demand. This might result in allocation of this type of container to relieve the situation existing among chemical manufacturers. When steel drums were banned for certain chemicals, paints, and oils, large orders were placed for fibre containers, wood boxes and barrels. Barrels have not been coming along due to inability of makers to obtain steel hoops.

Absorb Freight Tax

OPA says that the three per cent. property transportation tax which became effective December 1, must be considered as a freight rate increase, and not as a tax that can be passed on to the consumer. This means that either the manufacturer, the retailer, or both must absorb this tax.

Bristle Order Amended

WPB Order M-51 controlling pigs' and hogs' bristles has been amended. The manufacture from November 30, 1942, through February 28, 1943, of shaving brushes containing bristles not longer than 2⅞ inches, which were in inventory on September 7, 1942, are exempted from the provisions of the order. Also the manufacture of tooth brushes during the same period from bristles not longer than 3⅛ inches which were in inventory on September 7, 1942, are exempted. Owners of bristles are now required to file with the Bureau of Census, Department of Commerce, not later than the tenth day of the following month, on Form PD-217, a report of his holdings and consumption of bristles during the previous month. Reports might also be required by the WPB.

GROUP HEALTH INSURANCE

THE following is taken from the record of the recent hearing on medical manpower before a Congressional committee. The men who make the statements are Senator Claude Pepper, of Florida; Dr. Morris Fishbein, editor of the Journal of the American Medical Association; Henry J. Kaiser, shipbuilder; and Dr. Sydney Garfield, of Kaiser Industries.

Senator Pepper: It is interesting that you, in your capacity as a paid representative of the American Medical Association, would exhibit the initiative that you—

Dr. Fishbein (interposing): I have always exhibited the utmost initiative of which I am capable in matters affecting public health.

Senator Pepper: I think that the poor condition of public health in the United States probably proves that you are correct in what you have said.

* * * * *

Dr. Fishbein: I see the Tire Administrator and say "We have no responsibility or authority, but we have publicity, and if you persist in what seems to us to be a rather odd attitude, we shall publish the facts."

Senator Pepper: You mean personally?

Dr. Fishbein: I would send him a letter and I would say that the Journal of the American Medical Association feels—

Senator Pepper (interposing): I was interested in the initiative that you, as a private citizen, exhibited. You mean you, as the editor of the Journal, are going to take the responsibility for the enforcement—

Dr. Fishbein (interposing): No, only for the publicity.

Senator Pepper: But you want to be the whipping boy that will see to it—

Dr. Fishbein (interposing): I can write a letter to the New York Times, as many other people do, and get the publicity; they would print it, I wouldn't have to print it in the Journal.

* * * * *

Mr. Kaiser: The Doctor (Fishbein) has intimated that he would emulate my technic in getting results by threatening publicity. I think that brings home a very important question, because if he really believes in that policy, possibly the medical profession or medical society must likewise believe in it, and that justifies the position that we have been holding. My feeling is that anyone who, by threatened publicity, accomplishes anything, both should be removed from the service of their country. I likewise feel that way both about myself and the medical association, if that is the policy they follow.

* * * * *

Mr. Kaiser: Then I take it, Doctor, that you believe in prepaid medicine?

Dr. Fishbein: I believe in prepaid medicine to such an extent that our own employees are insured under a hospitalization plan.

Mr. Kaiser: And you support it wholeheartedly?

Dr. Fishbein: I don't say all plans. I believe in prepayment plans that are set up on a legitimate basis; there are many strange plans set up on a peculiar basis.

Mr. Kaiser: We are assuming that they are legitimate; we wouldn't want anything that was illegitimate. The next thing is, if you were in my position and you couldn't get your men into a hospital and you were in an area, what would you do?

Dr. Fishbein: Well, it all depends. This question was asked me by another committee before which I testified recently—

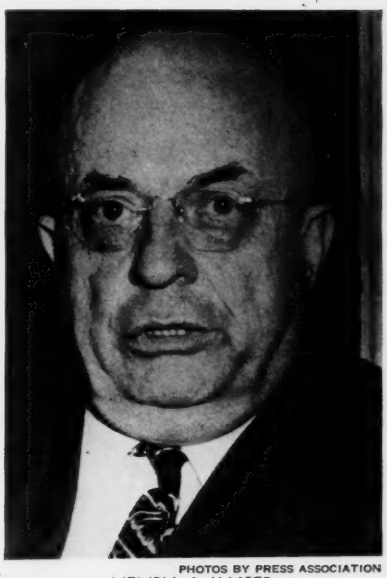
Mr. Kaiser (interposing): This is a specific case, we have men—

Dr. Fishbein (interposing): In the first place I believe always in operating within the law, whenever possible.

* * * * *

SENATOR CLAUDE PEPPER

DR. MORRIS FISHBEIN



PHOTOS BY PRESS ASSOCIATION

HENRY J. KAISER

Dr. Garfield: We have a shortage of beds in the area. Do you want us to go to the government and ask them for funds to build these hospitals?

Dr. Fishbein: You have to ask them for materials, whether you ask them for funds or not.

Mr. Kaiser: No, they don't give you the materials.

Dr. Fishbein: How do you get them?

Mr. Kaiser: Priorities.

Dr. Fishbein: Do you know what the priority rating on hospitals is?

Mr. Kaiser: It is A-1 when it comes to shipbuilding, because that is the only way you can get the doctors you are talking about over there, by giving them a ship to go over in. I want you to get that clear.

Dr. Fishbein: I happen to know what Dr. Parran testified about concerning the building of hospitals. Now I know, and everybody knows, that in areas of new industrial employment—

Mr. Kaiser (interposing): You are getting away from my ship.

Dr. Fishbein: No, I am not. In new industrial areas such as those with which you are concerned, because obviously you didn't have all those people there before we got into the war, there are a total of about 5,000,000 people in the United States who have moved for an industrial job as the result of the war. Wherever they have gone we need hospitals, we need one at Valparaiso, Florida; we need them out in Richmond, probably; and we need them in Vancouver—but it is impossible to build a hospital using private or government funds now without obtaining a release on essential materials.

Mr. Kaiser: We are doing it today, increasing our facilities.

Dr. Fishbein: I would say Mr. Kaiser, you are a very strong man and you get many things done that other men that are not quite so active do not get done.

Mr. Kaiser: That is a beautiful out! But again how can we get the young man over to do the fighting unless he has something to sail in?

Dr. Fishbein: And how can you get him to sail unless you have a doctor with him?

Mr. Kaiser: He therefore needs transportation and his health, and the health of the men that are building this transportation becomes fully as important as the men we send over.

Dr. Fishbein: Well, that is slightly debatable: whether or not a sailor or a marine who is fighting is more important than a shipbuilder, but I don't want to debate that.

Mr. Kaiser: Please, I asked you a question and don't give the answer from me, I ask you to give it for yourself. Is it important to have transportation?

Dr. Fishbein: It is of the utmost importance.

Mr. Kaiser: And is it important to have the men there to build the transportation?

Dr. Fishbein: It is important.

Mr. Kaiser: Is it equally important?

Dr. Fishbein: Equally important.

Mr. Kaiser: Now the next question is: In that particular area where we didn't have that service, wouldn't you have created it?

Dr. Fishbein: If I were there I would have had it.

Mr. Kaiser: I really think you would do a remarkable work if you immediately get busy, where it isn't being done today, and see that they are taken care of; and rather than defending it, correct it.

Dr. Fishbein: Pardon me, I am not defending anything. I am trying to show you that your statements have been made, and also those of Dr. Garfield, without a knowledge of what has already been done and is being done. You are concerned only with your little problem.

* * * * *

Senator Pepper: Now, Doctor, to go back to this group health insurance. You heard the testimony of Dr. Garfield that the head of procurement and Assign-

ment in the State of Washington raised objection to their medical facilities being extended to the members of the families of their employees. Are you prepared to state from personal knowledge that that is not the fact?

Dr. Fishbein: No, sir; I would like to look it up, though.

Senator Pepper: All right, you have that privilege, I am sure.

Dr. Garfield: Incidentally that is not only on the prepayment plan, but they wouldn't let us take care of them as private patients.

Dr. Fishbein: I would like to ask you who stopped you, Doctor, from taking care of anybody? Did you try to take care of civilians and have them stop you?

Dr. Garfield: We were afraid because they said—

Dr. Fishbein (interposing): Oh, now, Mr. Kaiser wouldn't be afraid.

Dr. Garfield: They stated that if we were to do that they would declare our doctors nonessential; they were cooperative up to that point.

* * * * *

Dr. Fishbein: States have laws regulating medical practice so that it is impossible to bring a man into the State of Florida—and I mention Florida merely because that is one of the states that has the most rigid laws that exist in this country—

Mr. Kaiser (interposing): I would like to get back to where I was—you will get me lost.

Dr. Fishbein: Washington, Oregon, and California.

Mr. Kaiser: Yes. Here is the question exactly. I would like to get back to it because you are carrying me all over the country and I will be lost. What would you do about my specific case?

Dr. Fishbein: If I were you I would ask my medical director to look into all the possibilities and not try to solve the problem sitting where he is, but to go to the places where people have the information as to how the problem is to be solved.

Senator Pepper: You mean to come to you, Doctor?

Dr. Fishbein: No, sir, come to the federal agencies which are charged with this task, and that is the Procurement and Assignment Service in this case.

Senator Pepper: That are being run by the American Medical Association?

Dr. Fishbein: Mr. Pepper, I would question that statement very strongly. If you can establish the fact—

Senator Pepper (interposing): Haven't you worked hand in glove with McNutt on this problem; you consulted with him on his speeches, didn't you?

Dr. Fishbein: No, that is absolutely untrue.

* * * * *

Senator Pepper: As a matter of fact the job those key men are doing is to keep men working in the shipyards and in the other war work that the Kaiser company is doing?

Dr. Garfield: That is all they are doing.

Senator Pepper: So they are contributing essential things to the carrying on of the war?

Dr. Garfield: That is right, and they are doing it in this way—one doctor to 2,000 men. Now the Army, according to what Mr. McNutt told us the other day, has 40,000 doctors to 4½ million men, approximately. That is 1 to 100. We are doing it with 1 to 2,000. Not only that, but we are taking care of all the sick men, all the men that the Army didn't take. We have no physical examinations on our job, that is a union demand, and even if it wasn't a union demand we would have to keep everybody working we possibly could. We are taking care of men on those jobs—some of them have cancer and they are physically unfit, all sorts of conditions, but we are keeping them working.

Mr. Kaiser: Senator, the Doctor is bringing out a point that is very important, and he is bringing out this point—that in the Army we have one doctor to each hundred men, where in the Army of Supply the men who are producing the things that those men need in the field to be protected, we have only 1 to 2,000. It is a problem worthy of a lot of consideration, and I don't know what the answer is, but it should be known that that problem exists.

* * * * *

Mr. Kaiser: Senator, this would be very interesting to you since you were at Grand Coulee. At Grand Coulee we went further than the men themselves, we also went to the families and took on the health of the families; and in the early stages,—all through the whole stage it is voluntary, please believe that—in the early stages we get only those families that were very sick, and it was not at all profitable, in fact it looked like a loss—is that correct, Doctor?

Dr. Garfield: Yes.

Mr. Kaiser: And we had only about ten per cent. And then suddenly, as the result of the service to the families, voluntarily it increased to 90 per cent., and when we finished Coulee Dam we had 90 per cent. of the families. And, Doctor, you can say how the deaths decreased. This is interesting.

Dr. Garfield: The most amazing part of the whole thing was that when we had the plan started and in operation, people stopped dying. That sounds funny, but actually what it meant was that they came to us,—

Senator Pepper: You don't mean that the American Medical Association opposed a plan which made it possible for people to stop dying, do you?

Dr. Garfield: Nobody opposed us up there because we were there alone, there were no other doctors and no other hospitals, and they let us alone. The reason they stopped dying was the fact that they would come to us with their early symptoms. There wasn't the factor of medical cost to keep them away. They would come to us with the first pain in their abdomen, when they first got their colds, and we would catch their appendicitis cases before they ruptured, would get the pneumonia cases before they were terminal, and we would take care of them and get them well. It really was amazing, it is the one thing that struck us, and we are sold on it. Financially we believe we lost money on the operation up there, but as far as that reflects on their health, it was tremendous.

LINIMENTS

By M. A. LESSER

LINIMENTS are often considered to be old-fashioned remedies and neither the modern medical nor pharmaceutical literature have much comment on these time-honored remedies. However, one need merely look into the average medicine cabinet to realize that liniments still occupy an important place among every-day, home-use pharmaceutical preparations.

Liniments are generally described as preparations in which active agents are dissolved or suspended in oily, soapy or alcoholic vehicles and intended to be rubbed on the skin to provide a counterirritant effect. Since liniments, in the accepted sense, are preparations to be applied with friction and employed chiefly for their endermic action, such standard items as Calamine Liniment, a dermatologic protectant, and Lime Liniment (Carron Oil), a burn preparation, do not properly belong in the category under consideration. Having been mentioned and differentiated, these need not be discussed further.

According to Fantus[1] standard liniments may be differentiated on the basis of the lubricating material employed in their formulation. Thus, liniments containing oils or fats are classed as oliments, while those containing soap are called saponiments. However, such distinctions are seldom employed because the chief use of a liniment is to produce counterirritative effects such as hyperemia (rubefaction). Hence, the main difference between liniments actually lies in their varying degrees of counterirritative action.

Despite the claims of some individual producers, liniments are intended solely for external use and, with few exceptions, should be applied only to the intact skin. Many of these products are applied with vigorous rubbing; the friction and massage heightening the therapeutic efficacy afforded by the liniment. As a matter of fact, the massaging is often more effective than the application of the remedy itself, but the liniment does lend the incentive for rubbing. Other liniments are applied on cloths such as flannel or lint. These help to keep the skin warm and prevent the evaporation of the medicament; thus promoting the desired action on the treated area.

Counterirritation forms the basis of a liniment's action and this in turn depends upon the presence of irritants in the preparation. As explained by McGuigan,[2] irritants are classified, according to the effects produced, as: rubefacients, vesicants and pustulants. Since different concentrations of the same drug may produce different grades of irritation, this classification is not fixed, but depends upon the degree of action rather than the agent employed.

In general, rubefaction or reddening of the skin accompanied by a sensation of warmth is the degree of action required or desired in liniments and related preparations.

In this connection, it is most pertinent that the manner in which a liniment is applied may materially affect the degree of action. For example, liniments containing a certain concentration of such agents as camphor, mustard, chloroform or the like will act as rubefacients when rubbed on the skin and left uncovered. However, if applied under an occlusive dressing, the same concentrations of these agents may act as vesicants, producing blisters. Obviously, this is a prime consideration in the formulation of a liniment and in the instructions for its use.

Locally, the counterirritant action of rubefacients causes dilatation of the blood vessels with transudation of fluid and blood cells, especially leukocytes, into the tissues.[3] Hence, the immediate local effect is quite apparent. However, the physiological mechanism by which counterirritation produces beneficial effects on internal organs located some distance from the skin's surface is not clearly understood. Present explanations are based largely on Head's[4] investigations. He found that when there is pain in one of these organs, it is readily influenced when an irritant is applied to a certain area in the skin, these regions being known as "Head's areas." It has been found that the skin area and the internal organ are innervated from the same segment of the spinal cord. Hence, it is believed prob-

able that sensations from the organ and sensations from this corresponding skin area travel by a common path to the brain. Therefore, if this common pathway to the higher centers be occupied by sensation from the skin caused by counterirritation, it may exclude or block more painful sensations arising from the internal organ. Anatomically there is some basis for belief in this common path theory.[2]

Another view, given in Blumgarten's[5] text, holds that because the application of counterirritants causes dilatation of the blood vessels in the skin, the blood is brought to the surface from the underlying tissues and organs supplied by the branches of the same arteries. Thus the inflammation of these deeper structures is relieved by directing their blood flow to the surface of the skin.

Still another theory, this one based on the psychic factors involved, explains the beneficial action on the basis of diversion of attention—the patient's mind being drawn from the diseased part to the more bearable sensation caused by the counterirritant. Other theories have been promulgated, but being based upon disproved concepts, have been discarded.[2]

In general, it may be said that counterirritants are used therapeutically to stimulate the central nervous system, increase sweating, lessen pain or promote absorption of exudates and combat inflammation.[3] Rubefacients, the chief ingredients of liniments and the constituents largely responsible for the beneficial action of these products, find many diverse applications. According to McGuigan,[2] rubefacients are employed to: (a) Relieve the pain and swelling of inflamed joints, muscular pains, pain and tightness in the chest, and congestion of the lungs, (b) Relieve distention and pain in the stomach and intestines, and other remote organs, (c) Mitigate the pain of sprains and contusions, and, (d) Accelerate healing in old sluggish tissues by improving the circulation.

Liniments are likewise employed for their beneficial effects on local pains, for their action on neurologic pains such as those due to sciatica, and for the relief of rheumatic conditions.

The medical armamentarium offers a fairly wide choice of rubefacients that may be employed singly or in combination for the formulation of liniments. Among the more frequently employed agents are: mustard, turpentine, camphor, capsicum, ammonia, arnica, alcohol, ether, chloroform, iodine, menthol, thymol and many of the pharmaceutically important volatile essential oils such as wintergreen (methyl salicylate), peppermint, lavender, rosemary, eucalyptus, clove, etc.

The concentrations of the several irritative agents employed in making liniments will of course be varied by the diluting action of the suspending or dissolving vehicles used in their formulation. Sollmann[6] states that the proportions in which they are used are about as follows:

Ammonia water; Tincture of Aconite, Belladonna, Iodine or Opium; Spirits of Camphor, Chloroform or Ether 1:5

Tincture of Cantharides or Capsicum, Turpentine; Spirit of Sinapis Croton Oil; Creosote 1:50

The vehicles employed in making liniments serve primarily as solvents or suspending agents for the counterirritant drugs. However, they may have other secondary functions and are often selected to provide a lubricating action or emolient effect, or to serve as tempering or modifying agents. Alcohol, isopropyl alcohol, glycerine, many vegetable oils and fats, kerosene and other organic solvents, soap solutions and soap liniment are among the vehicles employed most frequently.

With such a wide variety of materials to choose from it is not surprising that literally scores of general formulas for making liniments are available. Moreover, throughout their long history as prescription items or more often as standard home remedies for self medication, liniments have been devised to meet more or less specific needs or special requirements.

Despite the paucity of information on these preparations in the modern literature, it is significant that official and semi-official pharmaceutical texts still describe a considerable number of liniments. Thus the U.S.P. XII still continues to present four liniments of the endermic type; e.g. Camphor Liniment, Camphor and Soap Liniment, Chloroform Liniment and Liniment of Soft Soap (Tincture of Green Soap). Carried over practically unchanged from previous pharmacopoeias, Liniment of Soft Soap has been modified by the substitution of oil of cedar leaf for oil of lavender. This, however, is largely a war-scarcity measure.

In addition to these official liniments, the N.F. VII carries seven liniments whose action depends largely upon the presence of counterirritants. Among these are: Liniment of Aconite and Chloroform, Ammonia Liniment, Belladonna Liniment, Compound Liniment of Soft Soap, Solid Liniment of Soap, Turpentine Liniment and Acetic Liniment of Turpentine. With regard to this last liniment, it is interesting that although Grill and Nobach[7] showed that gelatin was superior in many respects, egg is still used as the stabilizing agent in making this emulsion product.

Nor should it be forgotten that the *Pharmaceutical Recipe Book II* lists about twenty-five additional, varied types of useful liniments containing counterirritants.

The U.S.P. liniments deserve more than passing comment. Not only are they undoubtedly among the most widely prescribed preparations, but each one has distinctive qualities that make for important uses. Thus, Camphor Liniment also known as camphorated oil, is said by Fantus[1] to be so mild that it may be applied to the skin of babies. It is also a favorite home-use counterirritant application to the chest of children in the treatment of bronchitis.

This authority considers Chloroform Liniment as an example for the prescribing of extemporaneous liniments. Camphor and Soap Liniment is valuable not only for itself, but because it serves very well as a basic liniment for the inclusion of other medicating ingredients, especially essential oils. Liniment of Soft Soap is valuable as an ingredient of many standard liniments.

In addition to the many liniments mentioned above, there are dozens of others that have been recommended and widely used.[8, 9, 10] Among the simplest of these is the Ammonia Liniment or "Household Liniment" described by Sollmann[6] and which consists of a mixture of:

Ammonia water	1 part
Almond oil	1 "
Olive oil	2 parts

Another simple liniment of Canadian origin, Menthol Liniment, is described by Lascoff[11] as consisting of:

Menthol	50 parts
Chloroform	200 "
Olive oil, to make	1000 "

According to Vallence[10] a Stimulating Liniment may be prepared from:

Tincture of Capsicum	26.5 parts
Ammonia water	26.5 "
Soap liniment, to make	100.0 "

Bliss[8] has listed the following formula as suitable for preparing a Mustard Liniment:

Mustard oil	3.5 parts
Menthol	2.0 "
Camphor	5.0 "
Cottonseed oil	15.0 "
Alcohol, to make	100.0 "

However, Fantus[1] is of the opinion that mustard oil is so powerful an irritant that three per cent. may be considered a maximum. However, he was referring to its corporation in Camphor and Soap Liniment.

The number of ingredients that may be included in a liniment is not restricted, as is evident from the following formula for an Aromatic Liniment:[10]

Methyl salicylate	5 parts
Oil of cedar leaf	1 part
Oil of sassafras	1 "
Oil of hemlock	1 "
Chloroform	5 parts
Tincture of opium	5 "
Spirit of camphor	5 "
Rectified oil of turpentine	3 "
Tincture of capsicum	3 "
Alcohol	71 "

Glycerine is known to have a warm, soothing effect on the skin, hence it is not surprising that it should find a place in the formulation of liniments, either as an emollient constituent or as a vehicle. The following formula for a rather pleasing and perhaps less harsh Glycerine Liniment illustrates its use in the latter capacity:[9]

Oil cajeput	1 part
Camphor	1 "
Alcohol	3 parts
Soap liniment	8 "
Rose water	16 "
Glycerine	24 "

From the standpoint of pharmaceutical elegance, many liniments leave much to be desired, and frequently a "shake" label is required. Of interest, therefore is the following liniment (White Liniment) which is said to yield a white, creamy product with excellent penetrating properties:[12]

Ammonium carbonate	30 Gm.
Castile Soap	24 "
Camphor	30 "
Alcohol	30 cc.
Water	720 "
Oil of turpentine	sufficient

Heat about two-thirds of the water and in it dissolve the castile soap. Separately dissolve the carbonate in the rest of the water, and mix the two solutions. Dissolve the camphor in the alcohol and add to the mixture. Then gradually add, with constant shaking, a quantity of oil of turpentine, sufficient to make a creamy emulsion.

There are some liniments in which a special effect on the nerve endings is attempted in addition to the counterirritant action expected.[1] Anodyne and analgesic liniments are generally included in this category and several formulas for making such products are available in the literature. One of the most frequently listed,[1, 8, 10] an anodyne application, said to be popular in hospitals, is the well-known A.B.C. Liniment, so named for its first three ingredients, which consist of:

Tincture of aconite	30 parts
Fluidextract of belladonna	30 "
Chloroform	30 "
Camphor and soap liniment	150 "

Another anodyne liniment is described as containing:[9]

Oil of wintergreen	1 Gm
Tincture of opium	1 cc.
Chloral hydrate	2 Gm
Thymol	2 Gm
Ether	3 cc.
Chloroform	4 cc.
Soap liniment	120 cc.

The following Analgesic Balm Liniment is almost invariably included in listing of formulas[8, 9, 10] and there is no reason for not including it in the present discussion:

Methyl salicylate	30.0 parts
Menthol	10.0 "
Saponin	0.5 part
Lanolin	32.5 parts
Chloroform	5.0 "
Water	100.0 "

When a physician prescribes a liniment for use in a specific condition it is assumed that the constituents will be such as to provide the most beneficial action for the condition being treated. Thus in the treatment of arthritis, the production of hyperemia is especially indicated by the poor vascularity of the skin of the chronic rheumatic patient. Liniments are especially valuable and one combination suggested[13] as suitable consists of:

Methyl salicylate	12 cc.
Quaiacol	8 cc.
Menthol	3 Gm.
Soap liniment, to make	120 cc.

To use this preparation it is advised that the affected parts be rubbed gently but thoroughly and covered with cotton and oiled silk.

The same source suggests the use of a liniment, such as either one of the two given below, for the local treatment of myositis:

I. Fluidextract of belladonna root	15 cc.
Camphor liniment, to make	250 cc.

This is to be rubbed thoroughly into the affected area at night and in the morning.

II. Menthol	4 Gm.
Chloroform	30 cc.
Soap liniment, to make	180 cc.

This is to be applied with massage twice daily.

Chilblains, prevalent during cold winter months and often attributed to poor circulation, is frequently benefited by the use of special liniments. The following English liniment[14] is typical of these rather old-fashioned preparations:

Camphor	5 Gm.
Potassium iodide	5 "
Glycerine	5 "
Tincture of benzoin	5 "
Soap spirit	40 "

So-called athletic rubs or rubdowns have undoubtedly come into wider demand as millions of men and women have started to use muscles that have not been exercised for years. Though not considered therapeutic preparations in the strict sense of the term, nevertheless they are widely employed to soothe sore, aching muscles or to facilitate massage. Hence these products do properly belong in the liniment category. As a matter of fact their ingredients, mode of application and general purpose is essentially the same as that of liniments, but their counterirritant action is, as a rule, much less marked.

Indeed mild liniments are frequently suggested as being suitable for use as athletic rubdowns or massaging aids. A case in point is the liniment used at the University of Iowa.[15] Considered a very good preparation and recommended for the use of basket ball players, this "Methyl Salicylate Rub-Out" consists of:

Menthol	12 Gm.
Chloral hydrate	4 "
Light liquid petrolatum	40 cc.
Methyl salicylate, to make	250 "

A preparation suitable for use both as a liniment or as a rubdown has recently been recommended by the younger Lascoff.[16] This consists of equal parts of methyl salicylate, alcohol and witch hazel. Employing the same ingredients, but in different proportions, Vallence[10] suggests the following as a simple Athletic Rub:

Methyl salicylate	2 parts
Witch hazel	50 "
Alcohol, to make	100 "

Of course many of the standard formularies present a large variety of athletic rubs. One such,[17] said to be effective and pleasant to apply and to contain but little alcohol, can be prepared from:

Oil of wintergreen	1 fl. oz.
Tincture of green soap	1 fl oz.
Fluid extract of arnica	1 fl. oz.
Witch hazel water	63 fl. oz.
Water, to make	1 gal.

Liniments are rarely the subjects of patents, but one patented product of this type is worth mentioning because acetylsalicylic acid (aspirin) is included as the unique ingredient.[18] In an example of a typical liniment the ingredients suggested, in addition to the acetylsalicylic acid, are: acetone, oleoresin of capsicum, oil of cloves, oil of camphor and cottonseed oil.

Because of the fact that many liniments contain ingredients with potential effects greater than those intended, complete directions for use must be present on all labels. The amount and type of massage or rubbing required is also important and directions with regard to the use of occlusive dressings, if such are indicated, should also be included.

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TALC USERS SUPPLIED

The situation in talc under the government restrictions forbidding the use by cosmetic manufacturers of the steatite grade containing not to exceed 1½ per cent lime and 1½ per cent iron oxide, is not as bad as it appeared at first glance. Reports from talc suppliers are to the effect that their stocks are ample to meet requirements and that they have been shipping to cosmetic manufacturers sufficient quantities of talc to replace the material that these cosmetic manufacturers could no longer use because of the freezing order.

Stocks of talc now in the East are considered plentiful and quite sufficient to meet normal requirements from this industry. Since all the talc now being bought is of domestic origin, coming from Western mines, the only difficulty is delayed transportation, and stocks normally maintained in the East are of such size that this delay is not of importance. Although there were a few bad moments after the government freezing order the situation was rapidly relieved by the regular suppliers of talc who rendered yeoman service in replacing frozen stocks with talc of cosmetic grade but above the 1½ per cent alkalinity stipulated in the freezing order. As a matter of fact, the job of replacing the frozen stocks was not as large as it might have been due to the fact that many of the larger face powder and body powder manufacturers have consistently specified more alkaline talcs than those now frozen.

PRICING PRIVATE FORMULAE

A pricing formula has been worked out by OPA for private formula manufacturers of drugs and cosmetics. This is contained in Maximum Price Regulation No. 282. The regulation provides that a manufacturer, in determining his maximum price for a private formula product which he did not sell in March, 1942, shall compute the unit direct cost of the new product. He shall add to this the percentage of mark-up which was obtained on the sale of a comparable private formula product, which during the year ended March 31, 1942, was nearest in quantity of sale to the product being priced. In determining the unit direct cost of the new product, a manufacturer will use the March costs of materials and the March labor rates, unless OPA has rolled back the prices of the materials or unless actual prices are lower, in which event he uses the lower prices. The comparable private formula product must be one which is similar in form and in the same class of product as the new item. Prices arrived at must be reported to OPA before any deliveries are made. This report contains a description of the new product, quantity sold, name and address of purchaser, proposed sale price and terms, and an itemized statement showing how prices were determined. If, within fifteen days, OPA modifies the prices, refunds may be required on sales and deliveries made during the fifteen day period.

OBSTETRICIANS IN ARMY

Thinking ahead to the fact that this war is being fought for future generations, it is interesting to note that the obstetricians and pediatricians are being taken in the Armed Forces in the same proportion as other doctors are being taken. At the recent Senate committee hearing on medical manpower, the following questions were asked of Dr. Morris Fishbein, editor of the Journal of the American Medical Association, by Dr. F. P. Weber, advisor to the committee.

Dr. Weber: What particular function do obstetricians serve in the armed Services?

Dr. Fishbein: A very good point. The United States government has set up a system whereby the wives of all soldiers, privates, in the Army, if they become pregnant and if they are in the vicinity of a camp, they have their deliveries in the hospitals of the Army. I have seen the nurseries in at least a dozen Army hospitals filled with infants. I happen to know that there are hundreds of obstetric cases scheduled during the next eight months at Fort Knox; there are ninety cases a month scheduled a month in Beaumont Hospital at El Paso, Texas—and that prevails all over the country.

* * * * *

Dr. Weber: I wanted to go back to the question of obstetricians. You mentioned that some of them are being used in their particular specialized professional capacity in dealing with the wives of privates around cantonments?

Dr. Fishbein: Yes, sir.

Dr. Weber: And it has been the policy of the War Department, since the beginning of the Selective Service Act, to request that privates' wives not come to camp areas?

Dr. Fishbein: That is right.

Dr. Weber: They have provided some housing for officers wives, but in the main we will say that 90 per cent. of the wives of privates are remaining at home?

Dr. Fishbein: That is correct.

Dr. Weber: So that the question of bringing children into the world, and their proper care in infancy, is a very critical question in American public health?

Dr. Fishbein: And you are, of course, familiar with the actions taken by the Bureau of Maternity and Infant Welfare in relation to this obstetric service?

Dr. Weber: And yet we find that the Army is taking obstetricians and pediatricians into the Army in the same proportion and ration that they are all other doctors.

Dr. Fishbein: Well, I know innumerable obstetricians and pediatricians who are in the Army. I would say that it is very likely—in fact, I have the evidence here of a number of areas where there is now a shortage of obstetric talent.

LUBRICATING CREAMS

By JOSEPH KALISH

LUBRICATING creams, an acceptable designation under the Food, Drug and Cosmetic Act for creams with major emollient action, have usually been emphasized for the correction of cosmetic dry-skin conditions. For this they are ideally suited, since they have been designated primarily for this purpose. The correction of excessive dryness, however, is not only important in a cosmetic sense. Skins are dried and roughened by exposure to sun, wind, and salt air in the summer as well as cold, wind, and dry house atmospheres in winter. Dryness also often follows operations in which the hands are submitted to the action of soaps. A good emollient lubricating cream should therefore have wider utility than mose women give it.

Virtually any type of cream can be, and is modified to make it a lubricating product, usually by the addition of suitable emollients. The first of the so-called "tissue creams" or "skin foods," however, were the original cold cream formulas. These were beeswax-borax-almond oil creams. A typical example is Unguentum Aque Rosae, rose water ointment of U. S. P. XII.

Spermaceti	12.5
Beeswax	12.0
Almond oil	56.0
Borax	0.5
Rose water	5.0
Distilled water	14.0

The spermaceti, beeswax and almond oil are melted together and heated to 70° C. (158° F.). The borax is dissolved in the rose water and water, heated to the same temperature, and stirred into the melted waxes. Stir until cold. This U. S. P. formula is not suitable for cosmetic purposes. It contains no preservative and is in danger of becoming rancid or showing mold growth. The cream itself is more like a salve, being heavy and pasty. It does contain a large proportion of a good but expensive emollient—almond oil.

A good cosmetic cold cream consists basically of beeswax, borax, mineral oil and water. To give desirable quick melting and spreading some of the white wax is usually replaced by paraffin wax. The low viscosity 65/75 mineral oil is quite satisfactory in this cream, from 35 to 40 per cent. being the optimum proportion. The water content should also lie between 35 and 40 per cent., with borax in amount equivalent to about one-twentieth of the beeswax used. The cream as outlined is devoid of emollient action.

Emollients are fatty or fat-like substances at least partially absorbed by the skin. They include vegetable and animal fats and oils (including lanolin, tallow, lard oil, cocoa butter, spermaceti, etc.) as well as some artificial products which include fatty alcohols, glyceryl monostearate, sorbitol esters, etc. A large enough proportion of emollient in the formula often has an adverse effect on the physical appearance of the cream, leading to dullness and granularity, while some substances, notably fatty alcohols, may have an emulsifying effect counteracting or supplementing the action of the primary emulsifiers already present. This may lead to instability of the cream, or thickening.

Along these lines, an experimental emollient lubricating cream of the beeswax-borax type may be formulated. Emollients specified may be replaced by others in case of shortages.

Beeswax	9.0
Paraffin	7.0
Peanut oil	12.0
Mineral oil	34.5
Cetyl alcohol	1.4
Borax	0.5
Water	35.0
Preservative	0.1
Perfume	0.5

Manufacturing procedure is the same as for the U. S. P. cream, waxes and oils being heated together until melted, borax dissolved in the water, both being mixed at 70° C., and stirred until cold. Add perfume at 40° C. or lower.

Lubricating creams are by no means limited to beeswax cold cream type formulas, the same type of effect being obtained by the presence of emollient in any cream.

Thus, the standard vanishing or stearate cream can readily be modified to include skin softening ingredients. Do not expect to obtain a pearly cream, however, if any substantial proportion of fat or oil is present.

Stearic acid	18.0
Cocoa butter	5.0
Lard oil	4.0
Lanolin	2.0
Triethanolamine	2.0

Borax	0.2
Glycerin	4.0
Water	64.2
Preservative	0.1
Perfume	0.5

In this formula, the first four items are melted together at 70° C. while the remaining items (except perfume) are heated to the same temperature. Stir the two together until almost cold and then add perfume. Stand overnight and then stir to break up the mass until a perfectly smooth cream results.

A variant of this vanishing cream formula does not contain excess stearic acid and is quite successful. Mineral oil is used along with the vegetable oil to improve the texture. A small amount of castor oil is included because of its lubricating value.

Stearic acid	8.0
Mineral oil	20.0
Hydrogenated peanut oil	8.0
Castor oil	2.0
Spermaceti	10.0
Amino glycol	3.0
Borax	0.2
Sorbitol	6.0
Water	42.2
Preservative	0.1
Perfume	0.5

Procedure is the same as for standard stearate creams.

Glyceryl monostearate produces good lubricating creams since it is itself a pretty good emollient. In this case, a choice of manufacturing methods is available. Either the fats and the water soluble ingredients may be heated separately and then mixed together as in previous formulas, or all of the ingredients may be heated together to boiling, stirred thoroughly while hot until completely emulsified, and then stirred until cold. A smooth cream usually does not appear until room temperature is approached.

Glyceryl monostearate	18.0
Spermaceti	10.0
Cocoa butter	5.0
Glycerin	5.0
Water	61.4
Preservative	0.1
Perfume	0.5

Occasionally, the stability of glyceryl monostearate creams is improved by the inclusion of a small amount of soap. This provides additional emulsifying power and is accomplished by adding the components of the soap, namely, stearic acid 2.0, potassium hydroxide 0.3.

Finally, absorption base creams are of great importance in any general formulation of lubricating creams. These correspond roughly to hydrous lanolin or lanolin creams. Lanolin itself, although high in emollient power, suffers from the disadvantages that it usually has an odor difficult to cover and also leads to sticky creams. Lanolin absorption bases are the result of determining the active emulsifying substances in lanolin, separating these from odorous substances and sticky waxes, and combining them with an inert base, usually petrolatum. Some of the more recent absorption bases contain no lanolin ingredients, active emulsifiers being fatty alcohols, polyhydric alcohol esters, etc. They are used in the same way as the original lanolin absorption bses.

Absorption base emulsions customarily separate into aqueous and fatty layers when melted and allowed to stand. For this reason it is advisable to work with them at relatively low temperatures, in the neighborhood of 40° C. The fatty ingredients are melted together and allowed to cool to this temperature. Water, at the same temperature, is added a little at a time, stirring thoroughly to emulsify the first addition before the next is made. This insistence upon water at the same temperature as the oil in all formulas is to prevent formation of wax crystals which would show up as gritty particles. Local cooling, by the use of cool water, will cause precipitation of wax particles. The larger the proportion of water in the absorption base (water-in-oil cream) the harder will be the cream, as distinguished from previously described products which are softened by the addition of water. Finally, all creams, but especially water-in-oil types, are markedly improved by passage through a colloid mill. A finer, more even-textured, and usually softer and more stable cream results.

Absorption base	15
Lanolin	5
Mineral oil	25
Petrolatum	10
Paraffin	5
Water	40

THE PHARMACIST TODAY

THE druggists of this country are about to return to the type of professional services for which they were educated. Surprising as it may seem, over the years that the length of time required for education and training for the degree of pharmacist were increased, the professional aspect of the drug store continued to wane. Finally drug stores became a mixture of a small department store and a lunch counter restaurant. The drug department in a very large percentage of stores was hidden away, and it was quite often difficult to recognize such stores as pharmacies. All manner of products were sold from electric irons, toasters, radios, to bath robes, bathing suits, and still other wearing apparel. It is true that self-medication was on the wane due to the fact that more people were going to doctors following years of a great increase in health education, but the druggists who were not maintaining strictly ethical stores, and who were successful, were foremost in the sale of all sorts of unrelated products and in the restaurant business.

Now a change is in order for various reasons all of which are brought about by the war. First, the druggist can no longer get electric irons, toasters, radios, metal toys, and many of the other gadgets that made his store look like a department store or five and dime store. This means that he must try to make up this loss in other directions. Secondly, his restaurant business is not apt to be as sure and steady as it once was unless he is near an Army Camp, Naval Training Station, or defense plants. In other localities, a loss will be suffered due to the drawing away of men for the Army and Navy, and the drawing away of both men and women to be employed in defense plants. It is true that the lack of domestic help might tend to offset this, but the shortage of certain foods and the extended rationing that lies ahead does not make the picture very bright.

But the shortage of doctors occurring from the supplying of enormous number of doctors to the armed forces will doubtless cause a sharp increase in self-medication and in the sale of drugs. Out of a total of 176,000 doctors in the country, approximately only 130,000 are effective. This is due to the fact that about 18,000 of the doctors over sixty years of age are ineffective, large numbers of doctors are employed in laboratories and other places and do not treat patients, and some are permanently in the Armed Forces. Out of this supply of physicians, 40,000 have already gone into the service, and when the Army reaches a total of 7,500,000 men, 30,000 more will be required. This means that 70,000 of the 130,000 effective physicians in the country will be in the armed forces, leaving only 60,000 to take care of the civilians.

This means that the doctors are going to be extremely busy. And when they are busy, they are more apt to depend upon the use of medicines. This is for the reason that they will want to handle patients with as little loss of time as possible, and the quickest way is to prescribe a medicine and see if that will improve the condition. This alone will increase the amount of drug business done by pharmacists, but there are other factors which will also improve his drug business. One of these factors is the large number of men and women in the upper ages who are working hard and long these days not only in defense factories, but also in the homes and in other places. These people will fall sick easier under the additional strain that they have placed upon themselves, and consequently they will need more medicines to keep themselves going. Another factor is the increase in self-medication that is bound to occur among all classes due to inability to see a doctor. The reason why these people will not be able to get to the doctor is two-fold: first, the doctors will be too busy to give them much time, and secondly, these people will not have the time to spare from their work to sit a long time in a doctor's office. It is only human nature to consider that some illness is only slight and can be quickly cured by one or more well-known remedies, so now, more than ever before, these people will try these remedies first in the belief that they can save the time and trouble necessary to see the doctor. Gasoline rationing will enter into the difficulty of get-

The drug store is bound to change in character during the present emergency. Loss of supplies of extraneous lines and increased demand for drugs and professional advice due to the shortage of doctors will swing drug stores to the ethical side.

ting to the doctor, as will also the lowered effective income of those who are not in a greatly improved economic condition due to defense work. After all, the average citizen who has been making the same salary or wages over the years will be so hard hit by taxes and high costs of the necessities of life that he is not going to spend money on a doctor if he does not have to.

Naturally there should be a real expansion in the drug business of the drug store which should offset to a marked degree the losses which retail druggists feel in their other products. This gain should come not only in proprietary medicines, but also in ethical specialties which should be sold over the counter in far greater volume, but also in prescriptions. In many instances, the retail druggist will be asked for advice and will be in a position to recommend products for various conditions. Therefore, the druggists will make full use of their professional services during this period both in the compounding of prescriptions, and in recommending products that are efficacious for the treatment of many ailments of minor nature.

It is natural that with the war there should also be a shortage of pharmacists as those within the induction age limits and without undue dependents are taken into the Armed Forces. This will mean harder work and more hours per day for those who operate stores and are unable to get additional trained help. Also a strain will be placed upon those retail drug stores which stay in business due to the additional business which comes their way as the result of some stores being closed up because the pharmacists who own them are compelled to join the Armed Forces.

Due to the extremely heavy demands upon drug manufacturers and upon medicinal chemical manufacturers for products for the Armed Forces and for Lease-Lend, and other government purposes, supplies of drug products for the pharmacists to dispense for civilian use are not going to be as plentiful as might be thought necessary. However, the government agencies will doubtless see to it that those products which are believed to be essential to the maintenance of civilian health are in sufficient supply. However, because of this condition, it would be wise for the retail druggists to carry ample stocks. Another reason why ample stocks should be carried is because shipments are now subject to considerable delay due to the jamming of our transportation facilities, and also because shipments by wholesalers can not be made as frequently now since rubber must be conserved.

The retailers who remain in business during the present emergency can improve their positions materially if they have the will to do so. They must be willing to work long and hard. They must have infinite patience. They must be willing to forget a great deal about conditions as they were last year or the year before. They must be satisfied to be professional pharmacists and devote the great bulk of their time to the real practice of their profession. They must readjust the layout of their stores to a great degree, placing the emphasis on their stocks of medicinals and such things as should properly be in demand at the present time and which can be replaced due to the fact that the government considers these things essential.

The pharmacist is of great importance today and he should consider it his duty to give what he can in the way of professional services to aid the war effort. For if he does this, he will not only be aiding his country in time of stress, but he will be building up his own reputation and thus improving his relative position in the profession. If he works hard during the present emergency, he will improve the standing of his business to a point that will stand him in good stead after the war is over and competition again becomes keen.

The pharmacist in the drug store has the real chance of his lifetime to prove that he is a professional man and not what he has been called in many instances due to his large lunch counter and storeful of extraneous items which have nothing to do with the practice of pharmacy. He can prove that the excellent training that pharmacists have been receiving in this country in recent years is well worth while continuing for the good of the Nation.

SHORTAGES INCREASING

Chemical manufacturers nowadays just about defy you to name one chemical that is in short supply. And while the situation is not really as bad as that, it is pretty nearly that bad. Things are tightening up very fast in all directions as the war effort is being stepped into high gear. Critic acid is not only so tight with the fermentation manufacturer due to inability to get additional equipment and additional supplies of molasses that customers are now on a basis of fifty per cent of last year's purchases, but is it equally tight with the manufacturer who makes it from lemons. The citrus fruit manufacturer of citric acid is being called upon by the government not only to give large quantities of citric acid, but they must also supply large quantities of lemons and of lemon juice, all three being the same thing in that they mean consumption of lemons. To make this problem still more difficult, labor is extremely difficult to obtain to pick the lemons. So these people are really up against it to supply what the government asks for.

Other tight chemicals remain in positions that are just about the same only they are tending to become tighter for the most part. Phenol is extremely tight and for this reason salicylates are under great pressure. Caffeine and theobromine are very tight and the government has made some changes in the order controlling them. The order now requires that form PD 600 (the producer's or distributor's application for authorization to use or accept delivery) be filed on the fifteenth of the month preceding the month in which delivery is to take place. Previously the filing was to be done on the twelfth of the preceding month. The number of copies of form PD 600 gas been changed and now it is required that three copies be filed with WPB and one copy be filed with the supplier. The instructions for executing form PD 600 have also been changed.

The necessity of finding substitutes for critical materials becomes more urgent every day. Naturally glycerine is extremely critical, and a steadily increasing number of users of this material will have to find substitutes or do without. Tobacco manufacturers who use glycerine to keep their products moist are frantically searching for some substitute that is not apt to become critical.

The reasons for the increasing number of shortages and the greater stringency in the items that have been considered critical for some time past is that in stepping the war effort to a new high level many factors are involved. In the first place, we have now opened a second front that must be supplied in steadily increasing amounts of men, munitions, planes, tanks, and all kinds of supplies until the war is won. There must be a constantly rising quantity of all sorts of things thrown into this front. In the second place, as we expand our Lease-Lend activities, we find that many of the other countries in the United Nations as well as the people in territories which we have taken over in North Africa and other places are requiring things that we did not know they would require. Some of our allies require different things in munitions than we knew they would use—things that we did not use ourselves and still do not use. Furthermore, we are still fighting a strong offensive war in the Pacific as well as in Africa, and offensive warfare takes far greater quantities of men, munitions and other implements of war, as well as supplies of all kinds than does defensive war. But if the war is to be won within a comparatively short time, offensive war is necessary.

Therefore, manufacturers in this industry can anticipate further curtailment of all kinds and sorts of chemicals during the coming year. There will be no way of telling from one day to the next what will be scarce next. Many scarcities are due to the lack of shipping space to bring raw materials into this country as is the case with products coming up from South America. Critical materials must be brought up from South America, and as with coffee, many other things can not be brought up from that continent.

SYNTHETIC ANTIMALARIALS

The annual production rate of Atabrine during December is at the rate of 800,000,000 tablets, or 16,000 per cent above this country's normal requirements, according to Winthrop Chemical Company, makers of the product. When all production units now authorized are operating at capacity, production in this country will be at the annual rate of 1,600,000,000 tablets—enough to treat 106,000,000 cases of malaria. This is believed to be enough not only for the armed forces of the United States, but also for much of the civilian populations of these countries. The rate of production of Atabrine by the end of 1942 is sufficient to treat 53,000,000 cases of malaria annually, whereas the total world supply of quinine previously available for malaria therapy could provide treatment in an estimated 50,000,000 cases per year.

The major portion of the 1941 production of Atabrine went to the Army, Navy, and other government agencies, which have flown large quantities to Brazil to protect workers on rubber plantations, as well as to other countries. The price of Atabrine, which was $66.66 per 1,000 tablets in 1933, is now placed at $4.50 per 1,000 tablets in sales to the government. This is said to figure out to a cost of 6¼ cents per case of malaria, as compared with 27 cents for quinine.

Plasmochin, another antimalarial used in conjunction with Atabrine, is now being produced at an annual rate of 84,000,000 units, compared with a pre-war production rate of 575,000 units annually.

OIL OF CASSIA

A SURVEY

By DR. ERNEST GUENTHER
Fritzsche Brothers, Inc., New York

(Concluded from November issue)

Oil Cassia "Base"
87% cinnamic aldehyde (free from chlorine)
13% benzyl acetate (free from chlorine)
100%

(a) 20% base
80% crude cassia oil
100%

This mixture would contain 2.6 per cent. benzyl acetate.
Detection: doubtful.

(b) 60% base
40% crude cassia oil
100%

This mixture would contain 7.8 per cent. benzyl acetate.
Detection: probable, but only if the analyst were looking for it.

From the above experiments it appears that benzyl acetate is a possible compound for sophistication, but from the strict theoretical basis, of course, detection of benzyl acetate in cassia oil would clearly indicate adulteration.

As a safeguard against purchasing cassia oils adulterated with synthetic cinnamic aldehyde, it has been recommended that the purchaser demand from the sellers in Hongkong a guarantee that the oil was shipped to Hongkong via West River cargo, which means directly from the producing regions to Hongkong, avoiding Macao.

TOTAL PRODUCTION AND EXPORTS

The total production of cassia oil in Kwangsi and Kwangtung amounts to about 200 tons a year. In 1938, 285,795 pounds were exported from Hongkong. Of this, 138,498 pounds went to the United States which has always been the most important buyer of Chinese cassia oil, consuming one-third to one-half of the total production.

PHYSICAL AND CHEMICAL PROPERTIES

Since crude cassia oil imported from China always contains at least small quantities of admixed kerosene and rosin, the United States Pure Food Laws do not permit employment of the crude oil as such. The United States Pharmacopoeia requires that the oil be rectified by distillation. It specifies the following limits:

Specific Gravity at 25° C.	1.045 to 1.063
Optical Rotation at 25° C.	From +1° to −1°
Refractive Index at 20° C.	1.6020 to 1.6135
Content of Cinnamic Aldehyde	Not less than 80% by volume
Solubility	One volume of oil is soluble in 2 volumes of 70% alcohol, by volume, and in an equal volume of glacial acetic acid.

The oil must also be free of heavy metals, rosin, rosin oils and chlorinated products.

During past years we rectified large quantities of imported cassia oil in our Clifton factory and established the following constants for pure oils:

Specific Gravity at 25° C.	1.046 to 1.059
Optical Rotation	Inactive to +0°26′
Refractive Index at 20° C.	1.6076 to 1.6180
Aldehyde Content (neutral sulfite method)	89.0 to 99.0%
Acid Value	4.2 to 7.8
Solubility at 25° C.	Soluble in 4.5 to 5.5 volumes and more of 60% alcohol.

The oils were free of rosin, rosin oils, kerosene, heavy metals and chlorine. The presence of chlorine in cassia oil indicates adulteration with crude cinnamic aldehyde. The aldehyde content of the rectified oil is dependent upon the quality of the crude oil used for rectification (80/85% or 90/95%).

Only half of the rectified oils showed a refractive index within the limits of the United States Pharmacopoeia, Eleventh and Twelfth Editions; the rest exceeded the upper limit. Therefore, it is desirable that the specifications of the USP be modified in this respect. We recommend a refractive index ranging from 1.6020 to 1.6180.

ANALYSIS OF CASSIA OIL

Since cassia oils are frequently adulterated, it is necessary to subject them to careful analytical control in order to ascertain whether or not an oil is of acceptable quality.

Aldehydes

The percentage of total aldehyde may be determined by one of the three standard methods; i. e., neutral sulfite, bisulfite, or hydroxylamine. Since the analytical results obtained by the three methods will differ somewhat, it is important to record which method was employed for the determination.

The neutral sulfite method is official in the United States Pharmacopoeia, Eleventh Revision.

> Place 10 cc. of the oil, measured from a pipette, in a 100 cc. cassia flask and add 50 cc. of a saturated solution of sodium sulfite which has been carefully rendered neutral to 2 drops of a 1% solution of phenolphthalein by means of a 25% sodium bisulfite solution.[1] Heat the mixture in a bath containing boiling water, and shake the flask repeatedly, neutralizing[1] the mixture from time to time by the addition of a few drops of the 25% sodium bisulfite solution. When no coloration appears upon the addition of a few more drops of phenolphthalein solution and heating for fifteen minutes, cool the mixture to room temperature, and, when the liquids have separated completely, add sufficient sodium sulfite solution to raise the lower limit of the oily layer within the graduated portion of the neck. The volume of the oily, non-aldehyde layer is determined, and the percentage of aldehydes is calculated by difference.

This method gives the aldehyde content as a volume per cent. Any water-soluble adulterants or any acids will increase the apparent aldehyde content.

The great simplicity of the bisulfite method recommends its use where exact chemical control is not practical.

> Place 10 cc. of the oil, measured from a pipette, in a 100 cc. cassia flask. Add 50 cc. of a saturated solution of sodium bisulfide and shake the flask thoroughly. The solid addition compound which forms immediately is dissolved by heating the flask in a beaker of boiling water and by thorough shaking. After all of the addition compound has been dissolved, cool the mixture to room temperature. When the liquids have separated completely, add sufficient sodium bisulfite solution to raise the lower limit of the oily layer within the graduated portion of the neck. The volume of the oily, non-aldehydic layer is determined, and the percentage of aldehyde is calculated by difference.

This method also gives the aldehyde content as a volume per cent. Water soluble adulterants increase the apparent aldehyde content. The method suffers from the disadvantage that there is no indication of the exact end point of the reaction.

The two adsorption methods described above permit of a separation of the non-aldehydic portion of the oil for further analytical or organoleptic tests.

1. It has been our experience that acetic acid is more satisfactory for this neutralization.

SCENE IN THE HARBOR OF HONGKONG

The well-known hydroxylamine method is extremely rapid and convenient. Further, it requires only a small amount of oil: 1 gram is the usual quantity employed in the determination, but considerably less may be used if necessary.

> Prepare an approximately 0.5 Normal alcoholic solution of hydroxylamine hydrochloride by dissolving 35 grams of the reagent in a small quantity of water and adding sufficient 95% alcohol to make up to 1 liter. To 30 cc. of this solution add 20 drops of a 0.1% solution of brom phenol blue in 50% alcohol, and neutralize with 0.5 N alcoholic sodium hydroxide; the alkali is added until the color of the solution changes from a bright yellow to a greenish shade. This neutralized solution is added to about 1 gram of the oil, accurately weighed, in a 100 cc. saponification flask. The flask is permitted to stand at room temperature for thirty minutes. The free HCl which is liberated by the reaction is then titrated with standardized 0.5 N sodium hydroxide; sufficient alkali is added to secure the greenish shade of the original neutralized solution. Each cc. of 0.5 N. alkali required is equivalent to 0.0660 grams of cinnamic aldehyde.

As mentioned above, the results will differ somewhat from the values obtained by the official USP method. The aldehyde content is obtained as a weight per cent. Moreover, certain aldehydes normally present in cassia oil (e. g., benzaldehyde, salicyl aldehyde, o-methoxycinnamic aldehyde) will react with the hydroxylamine and will be calculated as cinnamic aldehyde. Water

Native cassia still of Chinese construction. Head of still is clearly visible and the condensing vessel on top of it. Oil and water separate in box-like container at left.

soluble adulterants which are not carbonyl compounds will not increase the apparent aldehyde content. In general, the values obtained by the hydroxylamine method will be somewhat lower than those obtained by the official sulfite method.

o-Methoxy-Cinnamic Aldehyde (Methyl o-Cumaric Aldehyde)

F. B. Dodge[1] has suggested that the determination of o-methoxy-cinnamic aldehyde be used as a criterion of purity for cassia oils. According to this authority, good commercial oils contain about 12 per cent. o-methoxy-cinnamic aldehyde calculated from the methoxy number of the oil. Unfortunately, the difficulty of obtaining samples of known purity make the establishment of such limits a difficult matter. Moreover, the apparent o-methoxy-cinnamic aldehyde content, if determined from the methoxy number of the oil, could readily be adjusted by the addition of compounds containing a methoxy or ethoxy group.

Chlorinated Products

The identification of chlorinated products in cassia oils is indicative of adulteration with impure cinnamic aldehyde. Either the sensitive combustion method described in the USP or the so-called Beilstein copper wire test may be used to detect such adulteration.

1. *American Perfumer, 38,* 30 (March 1939).

Alcohol

The addition of relatively large amounts of alcohol may be determined easily by washing the oil with saturated sodium chloride solution and comparing the refractive index of the original oil with that of the washed oil. Since cassia oil is capable of dissolving small amounts of water, it is important to dry the oil over anhydrous sodium sulfate before the refractive indices are determined. If any appreciable difference is found in the two indices, a larger sample of the oil should be examined, and the alcohol identified in the first portion obtained upon distillation.

The presence of small amounts of alcohol (1 or 2 per cent.) is best indicated by a determination of the flash point of the oil: the flash point for a normal oil containing no alcohol lies above 100° C. However, according to Gildemeister and Hoffman,[1] a pure oil, free of alcohol, will occasionally have a flash point below 100°c. Hence, a more conservative limit was suggested: the flash point of a pure cassia oil which contains no alcohol should lie above 75°C. The values given here apply to the flash point determined in a closed cup apparatus of the Pensky Marten type.

Rosin

In the analysis of a cassia oil, a test for rosin should always be carried out, since this is a very common adulterant.

The official USP test for rosin is based upon the fact that rosin is soluble in petroleum benzine in which, however, cinnamic aldehyde dissolves but slightly.

> About 2 cc. of the oil are shaken in a test tube with 10 cc. of petroleum benzine. The liquids are permitted to separate and the benzine layer is decanted into a second test tube. An equal volume of cupric acetate solution (1 in 1000) is added: a green color (due to the formation of copper salts of rosin acids) indicates the presence of rosin in the oil.

It is well to carry out simultaneously a test with an oil known to be free of rosin, to act as a blank. Unfortunately, tests based upon color reactions have not proved too reliable in mixtures as complex as essential oils; nevertheless, this test will give an indication of the presence or absence of rosin.

The distillation test described by Gildemeister and Hoffman[2] will reveal adulteration with non-volatile material such as rosin, if large amounts have been added.

> About 50 grams of the oil, accurately weighed, are distilled from a tared distilling flask over an open flame. The distillation is continued until decomposition is evidenced by the formation of white fumes within the flask; this usually occurs at a temperature of about 280° C. The flask is cooled and weighed, and the percentage of residue calculated.

Normal oils show a distillation residue of 6 to 8 per cent., or at most 10 per cent., according to Gildemeister

1. *Die Atherischen Ole,* 3d Ed., Vol. II, p. 635.
2. *Ibid.,* p. 632.

(*Continued on page 695*)

Sheffalloy TRADE MARK REGISTERED
SHEFFIELD PROCESS TUBES

"TOUGH" is the Word

A staff diver at Marineland warily watches the gaping mouth of a 12 ft. Tiger Shark. Photo: Marineland Studios, Florida.

BUILT for a "career" of predatory underseas work, a shark is a toughie in anybody's language. Just as the shark is perfectly designed for the tough conditions it has to meet, so must your packages be designed for the "careers" they have ahead of them. Consider the mauling, the twisting and bending, the pressure given a collapsible tube, and you'll want them "tough as a shark" for your products. New England Tubes have long been known as the tubes that can take it. Exclusive processes of melting, mixing and tempering the metals make their toughness *bred in*—an integral, always-there, guarantee of super strength. Today when less critical metals are used, it is assuring to our customers to know that our SHEFFALLOY Sheffield-Process Tubes give more protection than their products ever need!

NEW ENGLAND COLLAPSIBLE TUBE CO.

3132 SO. CANAL STREET, CHICAGO • NEW LONDON, CONN. • W. K. SHEFFIELD, 500 FIFTH AVENUE, NEW YORK
THE WILCO COMPANY, 6800 McKINLEY AVE., LOS ANGELES, CAL. • EXPORT DIVISION: 116 NASSAU ST., NEW YORK

MERCHANDISING NEWS and PACKAGING NOTES

WARTIME CONTAINERS AND CLOSURES: Even though cosmetic manufacturers are not famous for worrying very far ahead, especially when business is good, the apparent indifference to the packaging problems which should catch up with them during the coming year is really something to marvel at. The all too general reaction seems to be to let the supply people worry about it. That's an attitude which has always worked in the past but one which may not work under present conditions for supply people generally in the container field have more than they can do in things like foods and drugs which have a prior call on anything they can turn out.

That the office of the Toilet Goods' Association is aware of the situation and of the attitude is implicit, we believe, in the wording of a bulletin released on this subject. This says that, "The work which the Association has been doing in Washington has led inescapably to the belief that civilian industries, including the cosmetic and toilet preparations industries, are likely to receive scant consideration in all cases where the use of materials needed for the war effort, is involved. Accordingly, the problem of substitute or alternate materials is becoming increasingly acute as more materials are needed for the war effort.

"There is no such thing as a complete and ideal alternate material. Substitutes are exactly what their name implies, namely, materials which are after a fashion taking the place of those materials no longer obtainable or obtainable only with great difficulty.

"It is the opinion of the Scientific Advisory Committee that members of the industry have given too little attention to the use of substitute materials in the formulation of their products and more particularly in their containers and closures. There is a strong possibility that both closures and containers of all types normally used on cosmetics, may be almost unobtainable within a comparatively short time. Accordingly, the Committee recommends that each member of the industry intensify his research in the development of substitute materials and containers and closures, developing alternates which, while not ideal or completely satisfactory, may be used when the situation becomes acute as it is almost certain to do.

"The Committee believes the closure problem is becoming more acute each day and that research on this problem should be intensified. Any substitute closures should be thoroughly tested before they are adopted The situation may be briefly stated as follows: (a) Plastic closures though difficult to obtain, may be substituted for metal closures on those products which can bear the additional cost. (b) Certain types of wood closures are available for products which can stand the additional cost. Closures of this type should be thoroughly tested, particular attention being given to moisture absorption. (c) The Committee understands that closures have been made from impregnated or specially treated paper and that though some are still in the experimental stage, others are about to be put into production. Sizes are limited. (d) Closures moulded in one piece from pulp products have been made in the laboratory. These are said to be satisfactory closures. It is thought that these can be made commercially if the necessary equipment can be secured. (e) Closures of glass have been made. In this type closure you have a glass to glass contact taking place during movement under pressure during the act of sealing, necessitating use of some lubricant. Information coming to the Committee indicates that great difficulty will be experienced in satisfactorily lubricating the glass threads. (f) Ceramic closures. The Committee has examined samples of ceramic closures and has made recommendations for their improvement. This work is still in the experimental stage. (g) An all glass container has been developed for vacuum packing only. A gasket of non-critical materials has been developed for this purpose."

Now we don't want to view with alarm but we think that added emphasis should be given to the statement, "there is a strong possibility that both containers and closures of all types normally used on cosmetics, may be almost unobtainable within a comparatively short time."

The manufacturer, for example, who is not working on a container or containers to replace glass, just as he has already worked out substitute containers to replace tin, may easily find himself without a package should demands of foods and drugs for glass take all of the glass making capacity. If things break right he might never have to use the wartime packages but he should know all about them and just what he can do if he has to.

Take the case of caps, for instance. No container is complete without a closure and metal closures for cosmetic containers are certainly on the way out. Now the

MACHINES MAKE BETTER GLASS

. . . when men like this run them

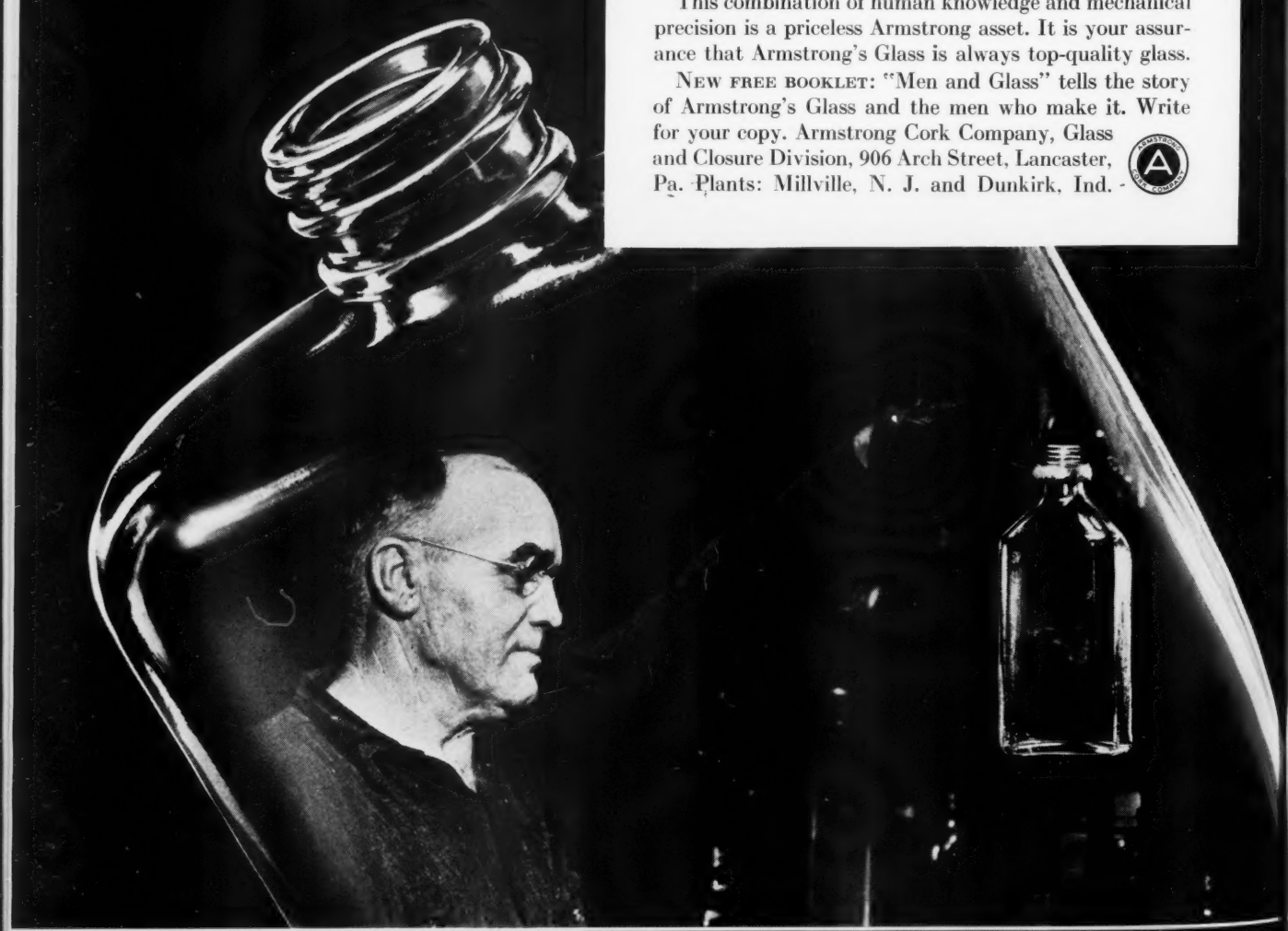
THIS IS Harvey Wallace. Years ago, he was a member of one of the most difficult and highly skilled professions in the world. He was a glass blower at Armstrong's Millville, New Jersey Plant.

Today, Armstrong's Glass is blown by mechanical lungs. And because Harvey Wallace and other experienced men like him operate Armstrong's machines, you're sure that Armstrong's Glass is made by men who know good ware when they see it.

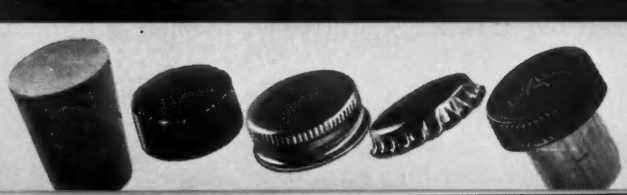
All the skill that Harvey Wallace has acquired in 47 years at Millville is engaged in helping his machine turn out quality glassware at a modern, high-speed rate.

This combination of human knowledge and mechanical precision is a priceless Armstrong asset. It is your assurance that Armstrong's Glass is always top-quality glass.

NEW FREE BOOKLET: "Men and Glass" tells the story of Armstrong's Glass and the men who make it. Write for your copy. Armstrong Cork Company, Glass and Closure Division, 906 Arch Street, Lancaster, Pa. Plants: Millville, N. J. and Dunkirk, Ind.



ARMSTRONG'S GLASS



and **ARMSTRONG'S CLOSURES**

best wartime substitute closure we've seen is made of high-strength, laminated cellulose materials and has much the appearance of a fibre board. It's a drawn cap with threads we couldn't strip by hand and it appears to have plenty of rigidity and strength. It's been subjected to severe tests by a vacuum packer of foods, who is well pleased with it and about to go to market with it. Although the company supplying the cap is a long-time cosmetic supplier and though he is supposed to have gone into cap making at the behest of a cosmetic house, he has been asked to restrict his sale to the food field for the present. That's what we mean when we say that cosmetics are near the end of a very long line when it comes to getting supplies needed by other fields. In this case, the cosmetic manufacturer may have surmised by now that he won't be able, for long, to continue to get metal caps, but he may be resting easy on the fact that new cellulose caps are on the way. Not until he turns his head will he discover that the cellulose caps are not for him either.

It's high time that every cosmetic manufacturer adopted a realistic approach to his packaging problems. Up to now, by and large, he has been living on his fat so far as containers are concerned. But 1943 is bound to see the end of even the largest stocks and long before the end, replacements and replacements for replacements should be given careful study. This is not an attempt to create a panic but simply a plea to institute some package research. Two or three wholly practical and non-critical alternate packages for each type of product are not too many to have in the development and experimental state, with at least one ready to go into production at short notice.

LEG MAKEUP: One of the as yet unsettled questions is just how good is the market for leg makeup going to be. Last season was really no test but even so there were many who considered it a flop. The real answer would seem to lie with the hosiery people, with what they turn out and at what price. If the stockings are too bad and too high-priced, the chances are that the gals will go to makeup as the lesser of two evils. In any case the summer of 1943 should tell the story.

In this connection it is interesting to read Fawcett's figures on a survey made among their readers. This reported that 3 per cent. of women reporting use leg makeup regularly, while 27 per cent. said they had used it occasionally. The liquid type is preferred by users, 91% voting for this form, against 5% for cake, 4.6% for cream or paste, and 2.6% for stick. In listing brands, 39% specified Miner's, which was far out in front. Ease of application, natural appearance and lasting qualities were the factors termed most important in selecting the product.

Most women who use leg makeup leave it on a day, subsequently using soap and water to remove the preparation. Chief reason for use is that it saves stockings. Chief objections are streaked, spotted appearance and time consumed in applying and removing.

THE COSMETIC TREND: Stores are likely to pay more attention to cosmetics in their post-Christmas sales promotions than in former years. The principal reason is that the majority of buyers are not entirely sure whether their usual promotional policies will serve them during the present time as stocks in most conventional post-Christmas items are uncertain and word has gone round that seasonal sales are not in the interest of the war effort. Whether this is so or not, the fact is that toilet goods are a good prospect and that they can help bridge that dead spot around the New Year.

As matters stand now buyers believe that they are justified in backing cosmetics through the coming year as one of the few articles upon which they can plan ahead with a reasonable certainty that supplies will reach the counters in approximately the same quantities as during the present year. Time must show whether they are right. But there is no doubt that orders are placed in good quantities and that the better known branded items will be upon the counters in their usual numbers. On the other hand, there is no denying that new-comers may find it more difficult to get a hearing unless the article is made from non-priority materials and makes a real contribution to current cosmetic needs.

Buyers expect that the war workers will dominate and that they must cater to them more strongly than they have heretofore. This means that counters will show a large proportion of utilities many of which are to be moved into the luxury class by better packaging and chaperoned by a familiar brand name. Restriction upon travel are bound to cut down the demand for sport cosmetics but their place will be taken by an increasing number of occupational cosmetics.

While buyers were worrying a great deal about packaging developments in the past they are inclined now to let the manufacturers do the worrying, having discovered in the meantime that customers are less concerned by packaging changes than had been expected. Drug stores will go heavily behind large size promotions as part of their usual sales drive during the early part of the year. They hope to maintain customers' interest in them through the year because of their wide appeal as an economy measure.

Manicure items and make-up are promising to hold the center of the stage which makes them the natural pace maker for the lotions, creams, etc., which are now necessities for many women who bought them only in small quantities previously. Shade trends are watched closely but are thought to be of less importance because of the greater adaptability of the current shade selections to the fashionable dress colors. Buyers are suspicious of freak shades.

As regards perfumes there is a feeling that scent variety will be less determined by the wishes of the customers and more by the necessity of the cosmetic chemists to put to best use what they possess of materials. Customers may have to take what they find and may be inclined to buy a well-known name rather than a scent.

FIBRE LIPSTICK CONTAINERS: Speaking of laminated cellulose caps, as we were just a few minutes ago, reminds us that there's a very swell looking lipstick container made of a similar material. It has rigidity and strength plus a nice, thin wall. It looks more like a metal container than any substitute lipstick holder we have seen and the effect can be heightened by using an all over lacquer in a metallic shade. As is usually the case in developmental work of this kind, the manufacturer does not want to show the stick until he is in full production and making satisfactory deliveries. However, by next month we should have samples to show you here.

SALES RISE IN SMALL LOCALITIES: More than 80 per cent. of the nation's wholesale druggists and grocers think that retail sales have increased in small towns since tire rationing, according to a survey conducted by Western Newspaper Union. About 63 per cent. put the increase from 10-25 per cent. while another 22 per cent. think sales are up as much as 50 per cent. Even if you write off some of this as what a wholesaler would naturally like to see happen and some more because retail sales are just very good everywhere, there still remains a considerable volume of proportionate increase due to the new importance of the retailer in the small locality. With transportation the way it is, the shopping trips to the big city are becoming less and less frequent.

COSMETIC PREMIUMS: It's all hearsay so far as we're concerned, but "Ad Quiz," published by Warwick & Legler says that movie premiums is big business with one operator alone doing two million dollars annually. Seems that crockery is the favorite, with lately a trend to cosmetics.

Special for Thursday and Friday—Five reels of "The Perils of Pauline" and One Dram of "The Afternoon of a Polecat."

MORE COSMETIC STATISTICS: The income shifts brought into effect by a wartime economy are reflected in the current 12th Survey of Beauty made by Modern Magazines among some 18,000 of its readers. Comparisons with 1941 disclose an increase of 38.2 per cent. in the number of incomes in the $2,000-$3,000 bracket; an increase of 42 per cent. in the number of incomes $3,000 or over, and a decrease of 29.3 per cent. in the number of incomes of less than $2,000 per year. According to Modern Magazines, "this phenomenal picture is but a reflection of the stupendous war production program. The number of income producers per family remains constant in the face of the withdrawals of men for the armed forces due to increased employment of women."

Incidentally, Modern describes it as a "$500,000,000 cosmetic market" which is a nice round number and only a few paltry million below our own figure for this market.

The survey is full of tables and charts but we found the spread tables on pages 14 and 15 the most interesting. It shows that sales of cleansing, all-purpose and cold creams are surprisingly evenly divided among the various price ranges with 21 per cent. buying at 10 cents, 23 per cent. at 11-25 cents, 21 per cent at 26-50 cents, 11 per cent. at 51-75 cents, 17 per cent at 76-100 cents, and 7 per cent. buying over $1 creams. Some 85 per cent. of Modern's readers use creams.

The Face powder market breakdown shows that by far the largest percentage buy the so-called $1 face powder, i.e., that selling from 76 cents to $1.00. Thirty-five per cent. of the survey group buy at this price range, while 22 per cent. buy at 10 cents. About 95 per cent. use face powder.

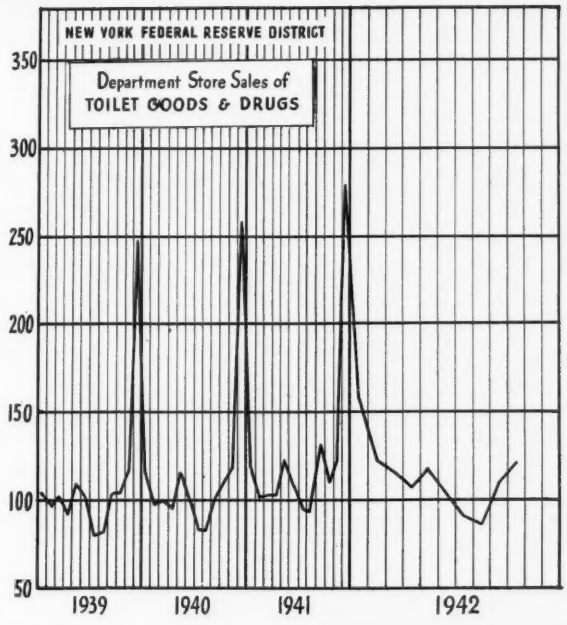
The lipstick breakdown shows the continued strong hold of the $1 stick with about 25 per cent. purchasing a stick in that price range. Thirty-two per cent. buy a 10 cent stick, while 92 per cent. use lipstick.

Perfume is the only item, as might be expected, where the majority of Modern's 18,000 readers pay $1 and over. Thirty per cent. pay about $1 while 33 per cent. pay over $1 and 70 per cent. use perfume. There is probably some confusion here in the minds of those surveyed for only about 50 per cent. report that they use toilet water. Here 47 per cent. pay $1 and 29 per cent. over $1.

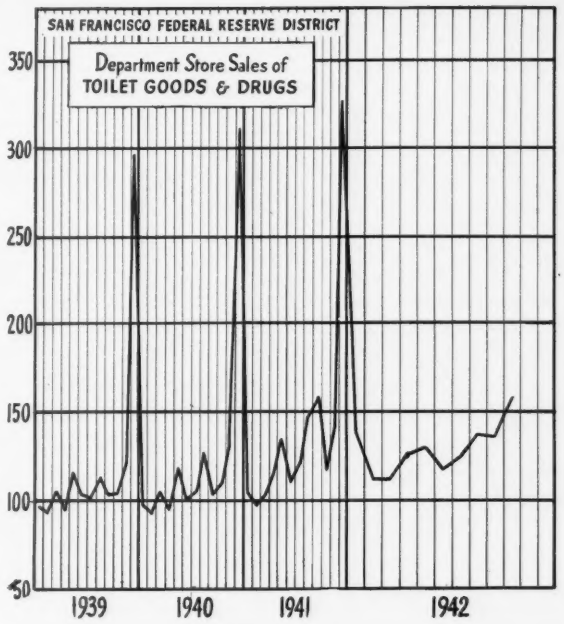
The brand leaders continue about as expected with Ponds the cream preference of about 30 per cent., Lady Esther, Woodbury and Coty are the face powder leaders with Coty getting the bulge in the $1 powder while Woodbury edges out Lady Esther for the 10-cent store lead. Pacquin is the big name in hand cream while Jergens is well ahead in the hand lotion preference. Tangee, Coty and Factor are the lipstick leaders with Factor and Coty neck and neck in the $1 field and without Tangee's volume in the 10-cent. field.

In the nail polish field Cutex and Dura-gloss, both 10-cent brands lead with Revlon, marketing only in the 60-cent field, a close third. Incidentally, 75 per cent. of Modern's survey group buy the 10-cent enamel while 13 per cent. buy the 60-cent brands.

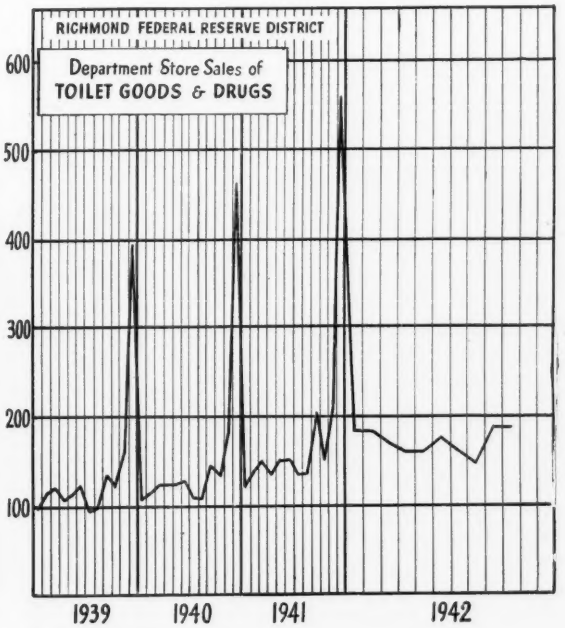
The first bottled tooth paste to make its appearance is "Trans," by Golden Peacock of Paris, Tenn. We haven't seen the actual product but the assumption is that it is fairly free flowing so that it may conveniently be dispensed by pouring from the bottle onto the brush. The company is very proud of the package design, especially the "dynamic, flashing effect of the unique label design when the bottles are displayed side by side."



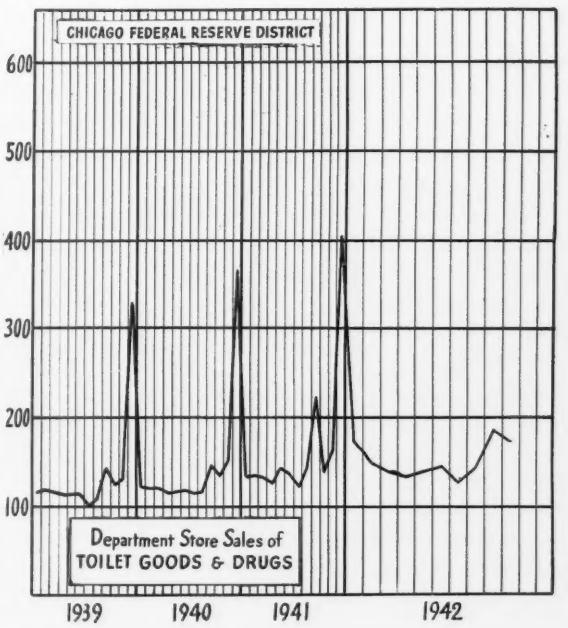
Sales of toilet articles and drug sundries by department stores in the New York Federal Reserve District were 10 per cent. greater in October 1942 than in the same month of 1941. This corresponds to unadjusted index numbers of 120.7 for October 1942, 110.6 for September 1942, and 109.7 for October 1941.



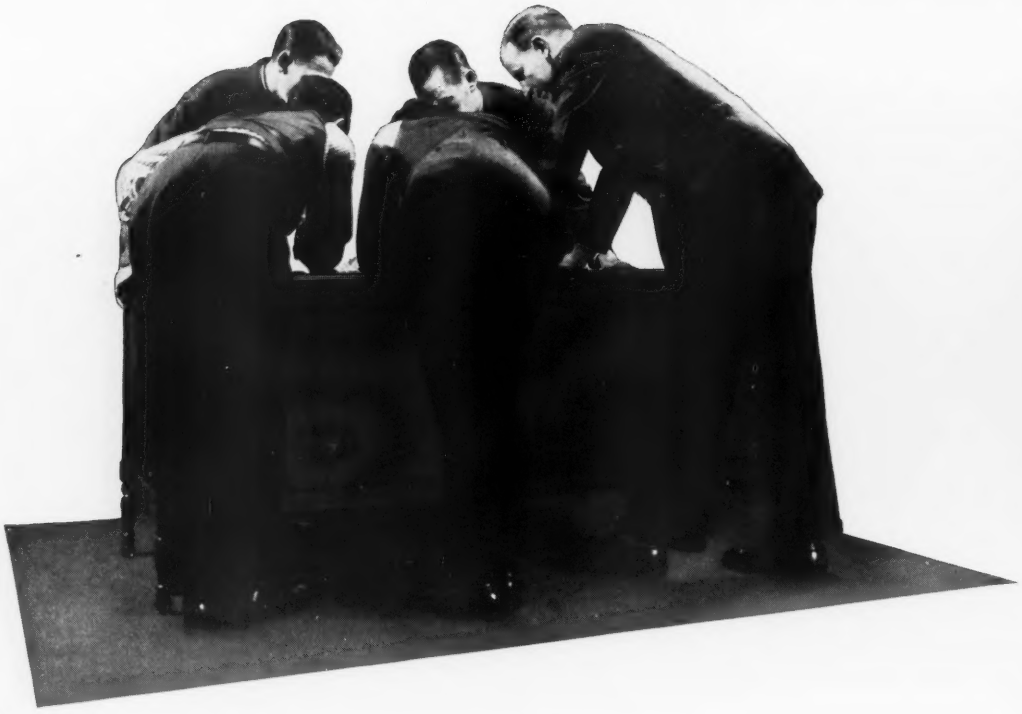
Sales of toilet articles and drug sundries by department stores in the San Francisco Federal Reserve District were 35 per cent. greater in October 1942 than in the same month of the preceding year. This corresponds to unadjusted index numbers of 158.1 for October 1942, 136.5 for September 1942, and 117.1 for October 1941.



Sales of toilet articles and drug sundries by department stores in the Richmond Federal Reserve District were 24 per cent. greater in October 1942 than in October 1941. This corresponds to unadjusted index numbers of 187.1 for October 1942, 188.5 for September 1942, and 150.9 for October 1941.



Sales of toilet articles and drug sundries by department stores in the Chicago Federal Reserve District were 25.1 per cent. greater in October 1942 than in October 1941. This corresponds to unadjusted index numbers of 172.0 for October 1942, 185.8 for September 1942, and 137.5 for October 1941.



One critical war material of which there's no shortage

AS the war goes on, it is becoming an increasingly *vital* material. Fortunately, it is also becoming a more *plentiful* material.

It is *ingenuity*. Yankee ingenuity. The kind of ingenuity that has helped American industry do the "impossible" in an impossibly short period of time.

It's the kind of ingenuity you've seen in the paperboard and carton industry. Ingenuity that has helped make it possible to ship as much food in *one* hold as formerly required *ten*—through the development of protective cartons for dehydrated foods. Ingenuity that has devised special paper boards and containers in which to send ammunition, medical supplies and ordnance parts to far-flung battle-fronts with far greater safety and convenience.

It's the kind of ingenuity, too, that is helping many a manufacturer convert from containers of critical materials, no longer available, to non-critical materials. The kind of ingenuity which has developed a new, money-saving coated board, produced in one continuous operation, at an almost unbelievable speed . . . that has brought about new accuracy and precision engineering in folding cartons to reduce spoilage and jam-ups in filling machines.

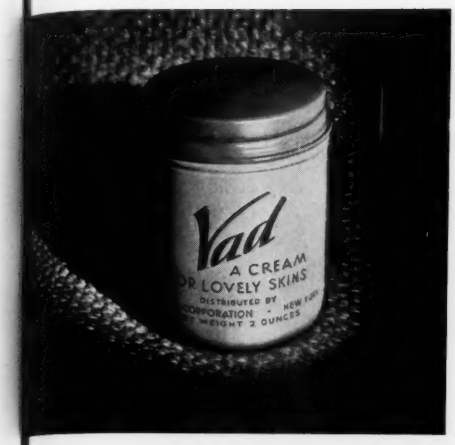
In the research laboratories of Gardner-Richardson, as well as in those throughout the industry, the skill and knowledge . . . and ingenuity . . . of carton and paperboard engineers . . . continues at work to solve today's problems. And tomorrow's.

The GARDNER-RICHARDSON Co.

MIDDLETOWN, OHIO

Manufacturers of Folding Cartons and Boxboard

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT



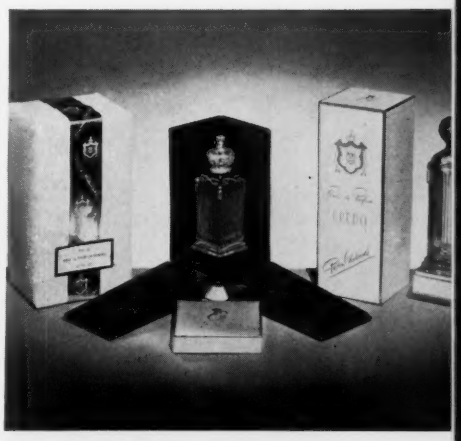
VAD CORP.

VAD CORP.

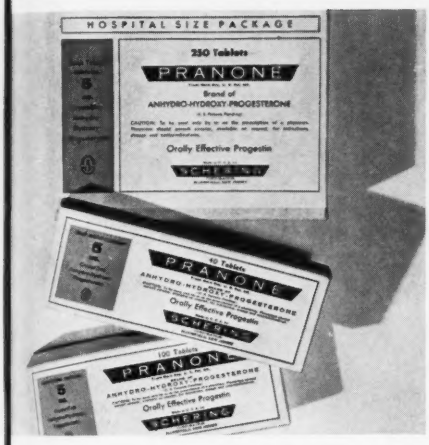
A new line of cosmetics named Vad, will be launched officially in January 1943. The Vad line includes three items: a cream containing 50 per cent. cod-liver oil; a cream with a greaseless base containing 25 per cent. cod-liver oil, and a lipstick containing 23 per cent. cod-liver oil.

PRINCE OBOLENSKI

Credo perfume is a newcomer in the field. It comes in two sizes and also in one size of eau de parfume. The handsome bottle has a stopper which is gold plated. The box is white with gold lettering and a rich red velvet lining. The outer carton is ivory with a gold band. Credo is being introduced by Prince Obolenski.



PRINCE OBOLENSKI



SCHERING CORP.

SCHERING CORP.

New Pranone packaging has been introduced by the Schering Corp. following a recent price cut of over 48 per cent. on this prescription item. Pranone is used extensively in corpus luteum therapy of threatening and habitual abortion, dysmenorrhea, premenstrual tension and functional uterine bleeding. New packagaing amounts of 20, 40, 100 and 250 (5 mg. and 10 mg. tablets) feature a more convenient dosage unit based on requirements of average patient. Packages of 12 and 60 have been discontinued.

PARFUMS SAINT CYR

Parfums Saint Cyr has introduced "Toujours ou Jamais," an exquisite perfume which for years was available to travelers in France and other resorts from Nassau to Brazil. The perfume comes in two sizes, one ounce and one-half ounce, and also a miniature purse size. The concentrated cologne in the same fragrance is available in two sizes.

PARFUMS SAINT CYR

GERMAINE MONTEIL

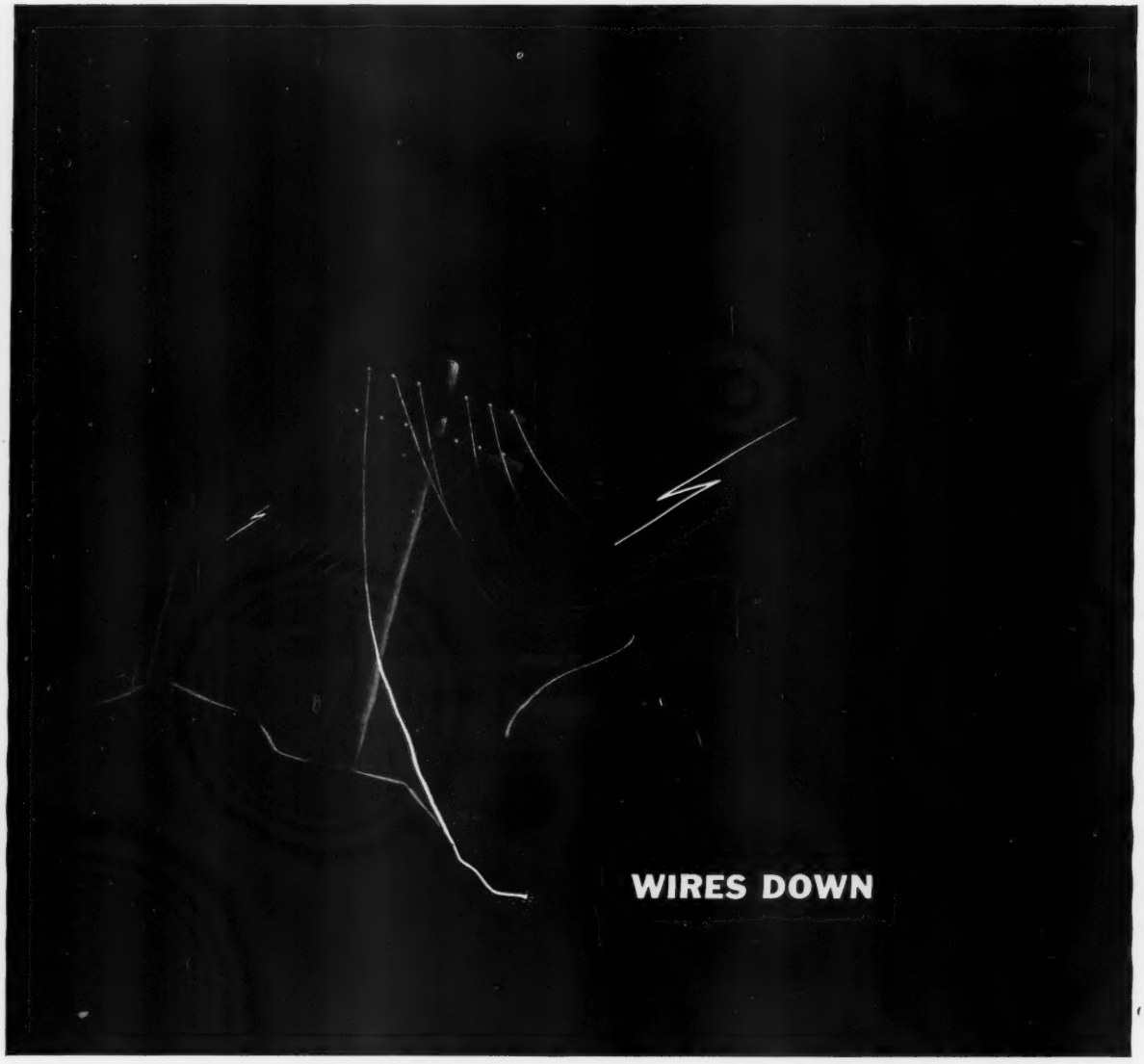
GERMAINE MONTEIL

One year after the introduction of "Laughter" perfume, Germaine Monteil presents an eau de toilette and bath powder of the same name. Laughter eau de toilette, the same delicate bouquet as the perfume, is packaged in a classically simple flacon. The square, luxurious box of gold which holds the bath powder has a lamb's wool puff. Both products carry the golden theme of Laughter perfume.

DARA PRODUCTS

Dara Products, Cincinnati, Ohio, presents Dara shampoo. Dara develops a rich, copious lather, requires only a plain clear water rinse, and creates a delightful feeling of freshness and cleanliness to the scalp. It comes in two sizes, eight and four ounce, in an attractive bottle with shaker top.

DARA PRODUCTS



The supply of a considerable number of your basic raw materials may now be cut off. And in many of these cases there seems to be little prospect of restoring normal service, at least for some time to come.

But does this mean that your regular production processes must simply halt and wait indefinitely? Not if chemical research has anything to say about it. Chemical research, as you know from previous emergencies, has a way of developing new materials, new products and methods that meet shortage situations—sometimes bring definite improvements.

Chemical research is as much a part of Cyanamid's activities as production itself. And because Cyanamid's services to industry are so broad and varied, the discoveries our research staff makes in one field often are found to be applicable in others. We are making constant efforts to perfect new raw materials for you while we operate at full capacity for war production needs.

American Cyanamid
AND CHEMICAL CORPORATION
A Unit of American Cyanamid Company
30. ROCKEFELLER PLAZA • NEW YORK, N. Y.

Water Soluble Gums... Aerosol* Wetting Agents... Zinc Oxide... Zinc Stearate... Talc... Waxes—Ceresine Wax Iso Beeswax... U. S. P. Beeswax... K & M Magnesium Oxide K & M Magnesium Carbonate... Aquasol* and No-Odorol*... Sulphonated Oils

*Registered U. S. Patent Office

NEWS

Companies

Nitardy 25 Years With Squibb

Ferdinand W. Nitardy celebrated his twenty-fifth anniversary with E. R. Squibb & Sons in November. He became head of the pharmaceutical manufacturing department of the Squibb Brooklyn laboratories in 1917 after nine years with Scholtz Drug Co., Denver. Today he is vice-president in charge of manufacturing, member of the executive

FERDINAND W. NITARDY

committee and member of the board of directors. A sterling silver humidor bearing the signatures of all his fellow board members was presented to Mr. Nitardy in appreciation of his twenty-five years of service.

To him goes much of the credit for the development of the Squibb system of control. He has also served Squibb in planning and supervising the construction of its several large, modern plants and laboratory buildings, including the Squibb Institute for Medical Research in New Brunswick.

Mr. Nitardy is former vice-president and member of the council of the American Pharmaceutical Association and was a member of the U.S.P. Revision Committee from 1920 to 1930.

Searle Names V. P's.

Paul E. Tillman and F. P. O'Brien have been elected vice-presidents of G. D. Searle & Co. Mr. Tillman is also treasurer of the company and Mr. O'Brien joined the organization last summer as executive assistant to John G. Searle, the president.

J. K. Gorman has been made assistant secretary to the company.

Squibb Adds to Biologicals

Carleton H. Palmer, chairman of the board of E. R. Squibb & Sons, has announced the completion of important new structural additions to the Squibb biological laboratories in New Brunswick, N. J., making possible enlarged production of serums and vaccines. The additions include a new three-story extension to the existing main laboratory building and two new one-story individual laboratory structures. A considerable portion of the new main laboratory addition will be devoted to the manufacture of Human serum albumin, developed by Professor E. J. Cohn of the Harvard Medical School, which is to be used in the armed forces for the prevention and treatment of shock.

The two smaller buildings will be devoted respectively to the manufacture of typhus vaccine and smallpox vaccine.

Owens Advances House

Promotion of William R. House, Owens-Illinois Glass Co., sales executive, to the position of branch manager of the Buffalo sales office of the company, has been announced by Smith L. Rairdon, vice-president and general sales manager.

Mr. House joined Owens-Illinois Glass Co. in 1923 as a salesmen in the Chicago territory. He was transferred to Buffalo in 1927 and came to Toledo in 1931 as district manager of closure service.

For a time he was stationed in New York as Owens-Illinois eastern district manager for cap sales. Late in 1935 he returned to Toledo to become assistant manager of the company's pharmaceutical and proprietary division, continuing in that position until 1942. In June of this year, he was assigned to the Buffalo office as assistant branch manager. In his new position he succeeds the late George W. Zingerle who died several weeks ago after a long illness.

M.M.& R. Expands in Chicago

For the fourth successive year the Chicago offices and warehouse of Magnus, Mabee & Reynard, Inc., at 221 North LaSalle St., have been enlarged to

TALMADGE B. TRIBBLE

facilitate the handling of a vastly increased volume of business in the midwestern area. The addition gives the company over 50 per cent. more space. Percy C. Magnus, president, has said that since Talmadge B. Tribble, vice-president in charge of the Chicago operation, took over four years ago the volume of the Chicago headquarters is up 600 per cent.

Routh and Quinn Advanced

Esse E. Routh has been elected vice-president and director of sales of the Mathieson Alkali Works, Inc., succeeding John A. Kienle who retired November 18. Robert J. Quinn has been appointed assistant to the vice-president and director of sales. Mr. Routh attended Virginia Polytechnic Institute and Davidson College and has spent his entire business life with Mathieson Alkali Works. From 1920 to 1928 he

BAYONNE COMPANY
INCORPORATED
404 FOURTH AVENUE, NEW YORK, N. Y.
TELEPHONE: MURRAY HILL 5-0250-1-2
BAYCO
BC
INC.
Aromatic Chemicals-Essential Oils

was southern sales manager and since 1928 has been general manager of sales.

Mr. Quinn received his chemical engineering degree at the University of Illinois in 1912. He joined the Mathieson Alkali Works, Inc., in 1920 as western district sales manager in Chicago, and became assistant general manager of sales in the New York office in 1923.

Mentholatum Gives

The Mentholatum Co., Wilmington, Del., has contributed a field ambulance to the American Red Cross. R. R. M. Carpenter, chairman of the Delaware Red Cross, accepted the gift from George A. Hyde, secretary-treasurer of the company. On October 13 the Mentholatum Co. presented a mobile canteen unit to the U. S. O.

Allderige Joins Bourjois

Bourjois Inc., New York, has announced that M. J. Allderige has joined the organization. He will concern himself with the merchandising of the Barbara Gould line. Mr. Allderige was until recently in the New York office of O. P. A.

McKesson Booklet

W. J. Murray, Jr., president of McKesson & Robbins, Inc., has written a special report as a tribute to the company's employees. It is called "Back of the Balance Sheet" and states that more than 700 men, 15 per cent. of all the men in the employ of McKesson & Robbins, are now in the armed forces and a full third of the present personnel consists of women employees.

Among the pictorial graphs illustrating the text is a chart emphasizing the length of service among the personnel of the century-old company. It shows that more than half of the 7,000 men and women have been with McKesson & Robbins for five years or more, and that fifty of them have had better than a half-century of service. The largest group of veterans—1957—is composed of those who have been with the company for 10 to 24 years, and 586 others have served from 25 to 49 years.

Vad Cosmetics

A new line of cosmetics named Vad will be launched officially in January 1943 by the Vad Corp., 745 Fifth Ave., New York. A. A. Berchin is president of the company which will market a cream containing 50 per cent. cod liver oil; a cream with a greaseless base containing 25 per cent. cod liver oil; and a lipstick containing 23 per cent. cod liver oil.

Florasynth Executives Complete Trip

Dr. Alexander Katz, chief chemist for Florasynth Laboratories, and F. O. Daiker, specialty man for the firm, have completed an extensive tour of the Pacific northwest. In Seattle, Dr. Katz met Louis A. Rosett, president of Florasynth, and they returned together to the company's headquarters in Los Angeles where Mr. Rosett will spend some time. While in Walla Walla, Wash., he visited his son, Lieut. Kenneth Rosett who is in the Chemical Warfare Service there.

While Mr. Rosett and Dr. Katz were in the west William Lakritz was busy at the Florasynth New York office although the mid-west is his regular territory.

Chrystal's 45th Anniversary

November marked the forty-fifth anniversary of the company which was founded by Charles B. Chrystal in 1897 to import and deal in industrial minerals. During this entire period Mr. Chrystal has been the active head of the business which was incorporated as the Charles B. Chrystal Co., Inc., in 1920.

Essential Oil Data

Advance copies of a listing of all important essential oils, compiled by Dr. Ernest S. Guenther and the research staff of Fritzsche Brothers, Inc., New York, arranged alphabetically and giving the botany, origin and application of each, together with a supplementary list based upon the oils' geographical origins, are available in pamphlet form prior to publication in a technical journal. Single copies are free and may be had by writing the company at 76 Ninth Ave., New York.

Dinner to Evans Staff

Ralph L. Evans Associates gave its staff a testimonial dinner in appreciation of their efforts and accomplishments during the year. Sixty-eight attended the gathering which was held at the Hotel Biltmore, October 30, 1942. The laboratories of Ralph L. Evans Associates are now located at 250 East 43 St., New York.

DINNER TO EVANS STAFF

Baker Joins Calco

Dr. Carle M. Bigelow, director of the pharmaceutical department, Calco Chemical Division of American Cyanamid Co., has announced the appointment of William B. Baker to head a technical service department. Mr. Baker was formerly with Sutliff & Case Co.

Dr. Harris Joins Bristol-Myers

Dr. Isaac F. Harris, who is said to have made available the first commercial vitamin product in this country, has been retained by Bristol-Myers Co. to continue research in his chosen field.

Brewers' Yeast-Harris was introduced to the medical profession in 1919 as a source of Vitamin B complex. It was used by Dr. Joseph Goldberger, U.S.P.H. service, for the treatment of pellagra, and later by Spies, Blankenhorn and Cooper.

Dr. Harris received a B. S. degree from the University of North Carolina in 1900 and his master's degree from the same university. He received his Ph.D. from the Graduate School of Yale University in 1915 after a protracted period of practical chemical service. At Yale he specialized in physiology, chemistry, biology, bacteriology and nutrition.

Consolidated Products Exhibit

Consolidated Products Co., New York, dealer in used equipment, had an "exhibit-in-motion" at the National Chemical Exposition, Chicago. The many-sided services of the company were graphically illustrated and the importance of putting idle equipment to work was shown. One group of photographs showed actual reconditioning of machinery at Newark shops, and another showed plant liquidations.

National Drug Appoints Schneiderwirth

National Drug Co., Philadelphia, has announced the appointment of Herman J. Schneiderwirth, Ph.D. as director of its research laboratories. Dr. Schneiderwirth is known for his extensive original research and has directed research activities in the pharmaceutical field for nearly twenty years in the New York metropolitan area.

His patents and publications deal with both biotherapeutic and chemotherapeutic agents. They include serums, vaccines, mucins, colloidal blood substitutes as well as synthetic organic chemicals of the pyridine and quinoline series and azo dyes.

Johnson & Johnson Changes

F. A. Cosgrove, treasurer of Johnson & Johnson, has been elected acting president to fill the wartime vacancy created by the resignation of Arthur R. Clapham, who is joining the United States Navy as a lieutenant commander, with assignment to the office of the Secretary of the Navy, according to Colonel Robert W. Johnson, commanding officer of the New York Ordnance Division. Colonel Johnson is on war leave from his position as chairman of the board of Johnson & Johnson which post remains vacant pending his return. George F. Smith will become vice-chairman of the board of directors and will continue as chairman of the executive committee.

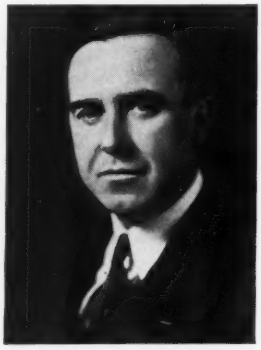
When Chairman Johnson accepted a commission in the Army Ordnance Department he created an executive committee charged with general supervision and direction of all its domestic and overseas subsidiaries and affiliated interests. This executive committee now consists of George F. Smith, chairman, F. A. Cosgrove, N. L. Smith, Kenneth Perry and P. D. L'Hommedieu.

ARTHUR R. CLAPHAM

Mr. Clapham, before joining Johnson & Johnson as comptroller in 1920, was a certified public accountant associated with Scovell Wellington & Co. He was elected vice-president in charge of sales in 1928, and ten years later was elected president, the first person not a member of the Johnson family to fill that post.

Mr. Cosgrove, in becoming acting president, emphasized that he was accepting this new responsibility only temporarily and expects to be relieved as soon as possible. He remains treasurer. Mr. Cosgrove will have as executive assistants P. D. L'Hommedieu and Kenneth Perry. Mr. Perry also becomes vice-president, retaining his post as general counsel. John J. Gibson, Jr., will fill the secretaryship vacated by Mr. Perry.

GEORGE F. SMITH



F. A. COSGROVE

The new officers of Johnson & Johnson in addition to those above-mentioned will be as follows: A. B. Hill, vice-president in charge of sales; E. E. Dickson, vice-president in charge of hospital division; W. C. Nicholas, vice-president in charge of manufacturing; G. S. Mathey, vice-president and director of research; J. S. Johnson, vice-president; H. J. Henry, director of merchandising; G. W. Achenbach, director of purchases; N. L. Smith, assistant treasurer and president of the Chicopee Companies; W. J Walters, assistant secretary and president of Johnson & Johnson, International.

All are members of the board of directors.

Frankfurter Joins Heyden

Otto N. Frankfurter has joined the Heyden Chemical Corp., New York, as manager of exports. For the past fifteen months he has been consultant and lend-lease purchasing officer for the Treasury Department Procurement Division, buying chemicals, pharmaceuticals and drugs. Before his association with the Government Mr. Frankfurter had been connected with the Barron Collier organization and the Philadelphia Inquirer as account executive. He entered the advertising business after his return to this country from Cuba and Mexico

where he had represented American interests in the drug and pharmaceutical field

Clarey Returns to Bristol-Myers

After serving for several months as consultant with the Office of the Co-ordinator of Inter-American Affairs, J. J. Clarey, Jr., foreign advertising manager of Bristol-Myers Co., has returned to his duties with the company.

While he was on leave Mr. Clarey was engaged in assisting in negotiations of the Office of the Coordinator and the Office of War Information for the leasing of all broadcast time of United States short wave stations.

Piret and Pfau Joins Rare Chemicals

Erwin T. Fritzsching, vice-president and manager of Rare Chemicals, Inc., Flemington, N. J., has announced the appointment of Adam Piret, as advertising and sales promotional manager, and Erik K. Pfau as sales and export manager. Mr. Piret was formerly advertising manager of Winthrop Chemical Co., New York, and Mr. Pfau has had considerable sales experience in the drug and pharmaceutical field in Latin America. He will be in complete charge of distribution and sales.

Rare Chemicals was recently acquired by the National Oil Products Co., Harrison, N. J. It is being operated as a wholly-owned subsidiary with Charles P. Gulick, president and chairman of the board of the parent firm, serving as president; Mr. Fritzsching as vice-president and manager; Ralph Wechsler as treasurer; and A. A. Vetter as secretary. Mr. Wechsler is the officer of the parent company in charge of operations of Rare Chemicals, Inc.

Armed Forces

Sergeant Doane Hage, Jr. Missing

Sergeant Doane Hage, Jr., son of Doane Hage, New York representative of the Arthur Colton Co., has been reported missing in action by the War Department. Sergeant Hage was aerial gunner connected with the 423 Bomb Squadron U. S. Army Air Corps, located in England. The action took place in the western European area, November 9.

Prior to his enlistment in the army last February, Sgt. Hage was a cadet at the Virginia Polytechnic Institute. His parents have a very strong faith that he may have been forced down in enemy

SGT. DOANE HAGE, JR.

territory and may yet be safe as a prisoner or that he may have been picked up by some boat.

Dr. Smith Commissioned

Dr. T. C. Smith, for the past six years one of the chief chemists of Florasynth Laboratories, has been commissioned a first lieutenant in the Chemical Warfare Service. At present he is attached to the procurement division of the Huntsville Arsenal in Alabama.

LT. T. C. SMITH

Prior to joining Florasynth, Dr. Smith was with a cosmetic concern in Los Angeles, and since joining Florasynth, has devoted a portion of his time to lecturing as an instructor in advanced chemistry at the University of Southern California.

Herbert Kaplow, who has been Dr. Smith's assistant at Florasynth, has also entered the Chemical Warfare Service and is now stationed at Gadsden, Ala.

Prentiss Commissioned Captain

Richard J. Prentiss, president of R. J. Prentiss & Co., New York, is now a captain in the Sanitary Corps., United States Army. He left to take up his duties in St. Louis on November 30. Captain Prentiss will take a leave of

CAPT. R. J. PRENTISS

absence for the duration. During his absence, Harold King, vice-president of the company, will direct the business in botanicals and Charles Hermann, also a vice-president, will direct the chemicals business. A. W. Bevernick will remain in charge of the Prentiss office in Chicago.

Senior Now Master Sargeant

Bob Senior, son of the late Charles Senior and a former member of the Florasynth Laboratories, who has been serving with the United States Army and has just returned from duty on convoys shipping to southern continents, has been promoted to master sergeant. Sgt. Senior originally enlisted in the 7th Regiment, New York, and after intensive training, received a rating as machine gun corporal. He was assigned

MASTER SGT. BOB SENIOR

LET YOUR N O S E

BE YOUR GUIDE

Many factors influence the selection of aromatic materials. It may be a question of stability in essential oils. Or perhaps it is a matter of odor quality . . . or fragrance fidelity . . . or uniformity.

In Dow Synthetic Aromatics, these important characteristics are found with unfailing regularity. They are the result of intensive development and research—providing complete assurance that every new formulation matches the perfection of the last.

That is why an experienced perfumer can *"let his nose be his guide."* He is able to select the Dow product of his personal choice—confident that each and every chemical formulation will meet the most exacting requirements.

DOW *Synthetic Aromatics*

THE DOW CHEMICAL COMPANY

MIDLAND, MICHIGAN

New York City • St. Louis • Chicago • San Francisco • Los Angeles
Seattle • Houston

to duty aboard vessels convoying vital materials to American bases abroad. After one month aboard ship, he was made gun captain, and the following month first sergeant in charge of his detachment. He subsequently received his warrant as master sergeant. Before our entrance into the war, Sgt. Senior was with the sales department of Florasynth Laboratories.

Frank Fay Commissioned

LT. FRANK FAY

Frank Fay has been commissioned lieutenant, senior grade, in the U. S. Navy, and is temporarily assigned to Boston. He is a veteran of the last war, having served in the Navy as chief petty officer; Lieut. Fay has been chemist for Parfumerie de Raymond, New York, for the past three years, and prior to that he was chemist for Produits Nina.

Fritzsche's Service Flag

Fritzsche Brothers, Inc., has announced that the stars on its service flag now number forty, one of them a gold one which honors the memory of Earl Hawkridge. He left the company early this year to enter the Coast Guard and was reported as missing over a month ago. The Navy has now given him up as lost. Young Hawkridge who would have been nineteen years old this December was an only son.

Gerry Cannon in Service

Gerry Cannon of Special Formula Corp., New York, has left for the Army. He will be a Volunteer Officer Candidate.

Ira Michaels in Service

Ira Michaels, Tourneur, Inc., has left for Ordnance Camp.

War Effort

Industry Advertises War Bonds

Under the auspices of the Drug, Cosmetic and Allied Industries Committee, which is cooperating with the United States Treasury to promote the sale of War Bonds, a new type of advertising made its appearance on December 7, anniversary of Pearl Harbor.

Robert B. Brown, vice-chairman of the policy committee, pointed out that the campaign is the outgrowth of plans made last summer by which participating companies have agreed to donate approximately 5 per cent. of their annual advertising budgets to the War Bond drive. So far more than fifty companies have signified their intention of participating and a tentative schedule has been laid out to use all national networks and more than forty national magazines.

Army-Navy E to Armstrong

The Army-Navy "E" has been awarded to Armstrong Cork Co., Lancaster, Pa. At the ceremony which marked the presentation of the award, Capt. E. C. Hamner, Jr., U. S. Navy (Ret.) pointed out that the employees of the floor division factory, closure plant, and general offices of the company had set a remarkable record in converting to war production. Armstrong is now making shells of various calibers, cartridge cases, bomb racks, aircraft parts and assemblies, shot for small cannon, bombs, concealment material, and many other munitions items—all of them far different from the company's normal peacetime products.

Colonel David N. Hauseman, district chief, Philadelphia Ordnance District, presented the "E" Award after Captain Hamner had awarded "E" pins to the employees. H. W. Prentis, Jr., Armstrong president, presided at the ceremony and Alexander Tate, who has been associated with Armstrong for more than 50 years, received the Army-Navy flag as the employees' representative.

Army-Navy E to S. S. White

The Army and Navy "E" for outstanding achievement in the production of war equipment was awarded November 17 to the S. S. White Dental Mfg. Co. The award was made, on a citation received from Robert P. Patterson, Under-Secretary of War, during ceremonies held at S. S. White's Staten Island plant.

The Government was represented by Lieut. Col. James A. Reilley, U. S. Army Air Corps, who presented the "E" pennant, and Lieut. C. R. Hoops, U.S.N.R., who awarded the employees' pins. Representatives of the S. S. White Co. were Fred E. Steen, president, James M. Talbot, vice-president in charge of production, and Leonard M. Wood, David W. Sprague and Alice M. Nevins who represented the workers in accepting the "E" buttons.

Horney Joins BEW

Charles J. Horney, for many years representing cosmetic suppliers on the Pacific coast, is now with the Board of Economic Warfare in the Drug and Chemical Section of the Office of Imports.

Denning of Ritchie on Committee

George S. Denning, W. C. Ritchie & Co., Chicago, is one of the committee members representing the setup paper box industry on the Research and Development Committee of the National Paper Box Manufacturers' Association. The Research and Development Committee was appointed to cooperate with the Containers' Branch of the War Production Board. It will work with W. W. Fitzhugh, Deputy Chief, Containers' Branch, in charge of packaging revision.

M. F. Ritchie on W.P.B. Committee

M. F. Ritchie, W. C. Ritchie & Co., Chicago, has been selected by the War Production Board to represent the setup paper box industry in discussing cross and long hauling. The committee of which Mr. Ritchie is a member is known as "Transportation Representatives of Containers' Industry."

People

Oscar Schmitz Wed 50 Years

Mr. and Mrs. Oscar Schmitz, Atkinson, Kan., celebrated their fiftieth wedding anniversary, November 29. Mr. Schmitz is a member of the Snowden-Mize Drug Co. and has been treasurer of the Federal Wholesale Druggists' Association for a number of years.

McKelvy Named Director

Election of Alfred D. McKelvy, New York, as a director of the Maico Co., Minneapolis, manufacturer of electric audio devices, has been announced by Leland A. Watson, president of the company. Mr. McKelvy is president of the Alfred D. McKelvy Co., New York, manufacturer of Seaforth Toiletries for Men.

Wesemann in Fritzsche 25 Yr. Club

November 23 the Quarter of a Century Club of Fritzsche Brothers, Inc., installed its eighteenth member, Hans P. Wesemann, vice-president and director of purchases. Mr. Wesemann was given a luncheon at Charles Restaurant, during which F. H. Leonhardt, president of the company, in a brief address paid tribute to his long and valuable service to the firm. William A. R. Welcke, first vice-president and treasurer, who has been with Fritzsche Brothers for fifty-seven years, presented a substantial Government War Bond to the new member.

Mr. Wesemann also received a Sterling silver service from the employees as well as gifts from the members of his department. Other club members present included, in addition to Mr. Leonhardt and Mr. Welcke, Mary Neary, Mae Caufield, R. R. Redanz, assistant treasurer, William Barnes, Thomas Coyle, Francis Riley, Charles Schneider, Albert Wardman and William Keller.

Lindquist Becomes Member

Iver T. Lindquist has been elected to membership in Controllers Institute of America. Mr. Lindquist is controller of Allied Products, Inc., New York.

Mohlman Writes on War

G. A. Mohlman, president, Package Machinery Co., Springfield, Mass., has written an article which appears in the November issue of "Executives Service Bulletin," published by the Metropolitan Life Insurance Co. Mr. Mohlman's subject is: "Converting to War Production."

McKee Becomes Member

J. L. McKee, controller, assistant secretary and assistant treasurer of Allied Laboratories, Inc., Kansas City, has been elected to membership in the Controllers' Institute of America, a technical and professional organization devoted to improvement of controllership procedure.

Remington Medal to J. K. Lilly

The Remington Medal was presented to Josiah K. Lilly, chairman of the board of Eli Lilly & Co., Indianapolis, at a dinner at the Hotel Pennsylvania, New York on December 9.

Dr. Curt P. Wimmer, former president of the New York branch of the American Pharmaceutical Association, sponsor of the award, made the presentation address. Leonard W. Steiger, president of the branch was dinner chairman. Other speakers were Dr. John Gabart Bowman, chancellor of the University of Pittsburgh; Dr. Cornelius P. Rhoads, director of Memorial Hospital, New York, and Dr. William Jay Schieffelin, Sr.

The dinner arrangements were made by a committee of which Dr. Hugo Schaefer was chairman.

Suellen Healy

A daughter, Suellen, was born to Mr. and Mrs. Michael J. Healy on November 15. Mr. Healy is with Naugatuck Aromatics.

Associations

Williams Heads DCAT

The newly elected executive committee of the Drug, Chemical and Allied Trades Section of the New York Board of Trade held its first meeting December 10 and elected officers for the coming year. Victor E. Williams, vice-president of Monsanto Chemical Co., was elected chairman; C. C. Caruso, Schieffelin &

VICTOR E. WILLIAMS

Co., vice-chairman; Robert B. Magnus, vice-president of Magnus, Mabee & Reynard, treasurer; Carl M. Anderson, Merck & Co., counsel; and John Ostrom, secretary.

S. B. Penick, retiring chairman of the Section, presided at the 52nd annual meeting, held at the Drug and Chemical Club, November 17, at which time the following executive committee was elected for the coming year: Carl M. Anderson, Merck & Co., Inc.; Harold M. Altshul, Ketchum & Co.; C. C. Caruso, Schieffelin & Co.; Hugh Crosson, McKesson & Robbins, Inc.; James DeCesare, White Laboratories, Inc.; Grover C. Hollings, Eli Lilly & Co.; R. J. Ingram, Bristol-Myers Co.; J. H. Karrh, Westvaco Chlorine Products Corp.; Elvin H. Killheffer, E. I. duPont de Nemours & Co.; Chas. L. Lightfoot, Anchor Hocking Glass Corp.; Robert B. Magnus, Magnus Mabee & Reynard, Inc.; Guy L. Marsters, Norwich Pharmacal Co.; E. D. McDaniel, Vitamins Plus; Harold D. Pomeroy, G. S. Stoddard & Co.; Robert J. Quinn, Mathieson Alkali Works; J. P. Remensnyder, Heyden Chemical Corp.; Ira Vandewater, R. W. Greeff & Co.; Lloyd I. Volckening, The Ivers-Lee Co.; E. T. T. Williams, Becton, Dickinson & Co.; Victor E. Williams, Monsanto Chemical Co.

F. J. McDonough, president of the N. Y. Quinine & Chemical Works, was re-elected the Section's representative on the board of directors of the New York Board of Trade.

A.D.M.A. War Bond Program

American Drug Manufacturers' Association, with the collaboration of Treasury officials, is sponsoring a War Bonds Program among its member firms. The committee responsible for preparing the plan, which will be administered by Carson P. Frailey, executive vice-president and his staff, was composed of: Robert Lincoln McNeil, president of McNeil Laboratories, Philadelphia, and treasurer of the association; S. DeWitt Clough, president of Abbott Laboratories, Chicago, a former president of the association and now a member of the executive committee; and John S. Zinsser, president of Sharp & Dohme, Philadelphia, a vice-president of the association.

The program calls for two approaches: (1) Use of a percentage of advertising space of each member firm in medical and trade journals, together with appropriate references in circulars and other literature furnished to physicians, dentists, veterinarians, pharmacists, and hospitals throughout the country. (2) War bonds campaigns in the individual plants with the goal 10 per cent. of pay roll and at least 90 per cent. of employee participation.

The special committee has been set up for the duration and the program can be revised to new war bond plans of the Treasury Department.

A.P.M.A. Winter Meeting

The American Pharmaceutical Manufacturers' Association held its midyear meeting at the Waldorf-Astoria Hotel, New York, December 7 and 8. At the meeting of the scientific section Monday morning president Clarence W. Warner,

Maltbie Chemical Co. presided. Addresses were given by Ernest Little, dean, N. J. College of Pharmacy; E. Fullerton Cook, chairman, general committee of revision, U. S. Pharmacopoeia; Justin L. Powers, chairman, committee on National Formulary, American Pharmaceutical Association; Louis Gershenfeld, professor of bacteriology, Philadelphia College of Pharmacy and Science. Frank B. Fisk, Pitman-Moore Co., chairman of the contact committee gave his report as did C. O. Miller, Lakeside Laboratories, Inc., chairman of the research board.

Supplemental papers were presented by R. L. Brault, Buffington's, Inc.—"Thiamine Hydrochloride Assay"; R. A. Cowles, Difco Labs., Inc.—"Chlorobutanol Assay"; Elizabeth McMeans, Pitman-Moore Co.—"Stability of F. E. Stramonium and Related Medications"; J. A. Calamari and P. B. Roth—"Method for Determining Tablet Disintegration"; Philip Bowman, Heyden Chemical Corp.—"The Polarograph; A New Analytical Tool for Pharmaceutical Research"; Carl Cunov, C. E. Jamieson & Co.—"A New Method of Assay for Tannic Acid"; and H. H. Hopkins, Chicago Pharmacal Co.—"Action of Parenteral Medications Upon Metallic Fittings."

At the meeting Monday afternoon the association's scientific award for 1942 was presented to Dr. Edward A. Doisy for his contribution in the hormone field. The presentation address was made by Torald H. Sollmann, M.D., D.Sc., dean and professor of pharmacology and materia medica, School of Medicine, Western Reserve University. In addition to Dr. Doisy's acceptance address, other addresses, all on the subject of hormones to which the whole session was devoted, were made by: George R. Cowgill, Ph.D., associate professor of physiological chemistry, School of Medicine, Yale University; Oscar Riddle, Ph.D., LL.D., research staff, Carnegie Institution, Washington, Station for Experimental Evolution, Cold Spring Harbor, N. Y.; and Ephrain Shorr, M.D., associate professor of Medicine, Medical College, Cornell University.

Monday evening president Clarence W. Warner presided at an executive session which followed an informal dinner.

The session Tuesday morning was the war session. Charles Wesley Dunn, general counsel of the association, presided and addresses were made by: Fred J. Stock,; chief of Drugs and Cosmetics Section, Chemicals Branch, WPB; Floyd B. Thayer, consultant to Drugs and Cosmetics Section, Chemicals Branch, WPB; Colonel C. F. Shook, Services of Supply, Office of Surgeon General, War Department; Lieut. Col. S. G. Smith, commanding officer of St. Louis Medical Department Procurement District; Dr. Morris Fishbein, editor, Journal of American Medical Association; Dr. Warren F. Draper, assistant to the Surgeon General, United States Public Health Service; Hugh Craig, managing editor, Oil, Paint & Drug Reporter; J.A.R. Dalley, chief of Chemicals and Health Supplies Division, BEW; Col. G. S. Brady, chief of Materials Statistics Division, Office of Imports, BEW; Colonel P. S. Moses, Selective Service System; and Maj. George Webber, War Manpower Commission.

The war session continued Tuesday afternoon with addresses by Charles Wesley Dunn; Patrick Murphy Malin, Price Executive, Chemicals and Drugs Price Branch, OPA; Frank A. Delgado, Chief of Drugs and Fine Chemicals Section, Chemicals and Drugs Price Branch, OPA; A. L. Tennyson, Chief Counsel for Bureau of Narcotics, U. S. Treasury Dept.; and Wallace Werble, editor of Food-Drug-Cosmetics Reports.

Beauty and Barber Ass'n

The National Beauty and Barber Industries Assn. has been organized as the successor to the Beauty and Barber Manufacturers' Committee which was originally organized in January 1942. The new association maintains offices at 125 West 45th St., New York. Lester Stone is the executive secretary. Regular officers will be elected at a meeting some time in January. At the present time the operating committee consists of: chairman, Martin Revson, Revlon Products Corp.; vice-chairman, M. K. Breslauer, A. Breslauer Co.; secretary Harold Cook, Nestle-LeMur Co.; Edward J. Breck, John H. Breck, Inc.; J. Edward Dwyer, E. Fredericks, Inc., Joseph A. Gallagher, Ar. Winarick Inc.; Jule Gordon, F. W. Fitch Co.; Emil J. Paidar, Emil J. Paidar Co., P. D. Spaeth, Realistic Permanent Wave Co.; Leon Spilo, Clairol, Inc. The co-chairmen of the membership committee are: Neal R. Andrews, Sales Affiliates, Inc., and L. R. Sandahl, F. W. Fitch Co. The aim of the association, which embraces leading manufacturers in the beauty and barber industries, is to elevate the standards and keep its members abreast of conditions in the industry. A general meeting of midwest manufacturers was held on December 8 at the Palmer House, at which Carl E. Bolte, special assistant smaller war plants division of W.P.B. was the featured speaker.

Proprietary Scientific Meeting

The mid-year meeting of the scientific section of the Proprietary Association was held December 9 at the Biltmore Hotel, New York. The following program was scheduled:

"Vitamins and the War Effort," Dr. William L. Sampson, Merck Institute for Therapeutic Research.

"The Laxative Action of Some American Wild Sennas," Dr. I. W. Grote, Chattanooga Medicine Co.

"1942 Anthelmintic Studies," Dr. Herbert N. Cobe and Dr. James C. Munch (presented by Dr. Cobe).

"The Bioassay of Uterine Sedatives," Harry J. Pratt and James C. Munch.

"Official Tolerances of USP XII and NF VI," James C. Munch and Joseph D. McIntyre.

"A Report on the Domestic Cultivation of Critical Botanical Drugs and Kindred Materials," Dr. Thomas Lewis, S. B. Penick & Co.

"Recapitulations—Changes and Trends in Medicinal Drugs After One Year of War," Dr. Edward C. Merrill, United Drug Co.

"Present Status of the Domestic Cultivation of Belladonna and Digitalis," Joseph D. McIntyre.

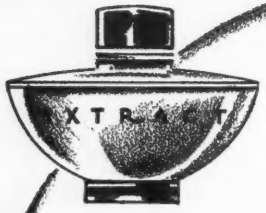
Following the presentation of the papers a round table discussion led by Dr. F. J. Cullen was scheduled.

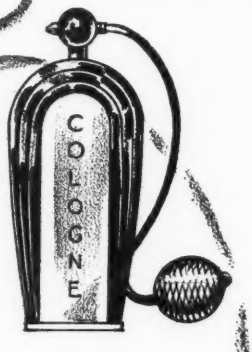
Chicago Christmas Dinner

The Chicago Drug & Chemical Association's 40th annual Christmas banquet was held at the Drake Hotel, that city, December 17. Because of present conditions, the custom of giving each guest a souvenir bag was discontinued but there were door prizes. Joseph P. Sullivan was chairman of the banquet and entertainment committee.

Chemical Salesman Nominate

The nominating committee of the Salesmen's Association of the American Chemical Industry has submitted the following slate of officers for 1943; president, Gerald S. Furman, Merck & Co., Inc.; vice-president, Philip J. LoBue, Michigan Chemical Co.; treasurer, Frank G. Fanning, N. I. Malmstrom &





Despite the handicaps of raw material shortages, substitutions, etc., our customers are still being supplied with

PERFUMES

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EVERY PURPOSE

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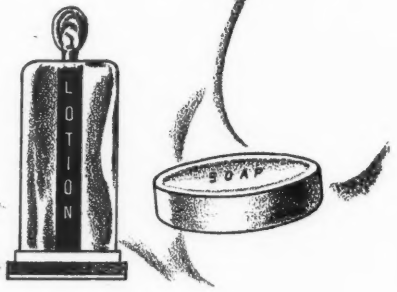
To our many friends a
Merry Christmas
and may the New Year
bring Peace and Victory.



ORBIS

PRODUCTS CORPORATION

215 PEARL STREET, NEW YORK · FACTORY & LABORATORY, NEWARK, N.J.

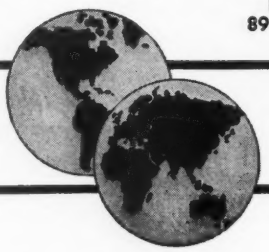
CHICAGO
831 N. Wabash Ave.

PHILADELPHIA
610 Brown Bldg.

BOSTON
89 Broad Street

MEMPHIS, TENN.
1620 Carr Ave.

Water Soluble Gums	Waxes	Cosmetic Raw Material	Fruit Flavors
Thymol	Stearic Acid	Oleo Resins	Food Colors
Aromatics	Essential Oils	Perfume Bases	Quince Seed
Rice Starch	Zinc Oxide French	Olive Oil	Irish Moss



Co.; secretary, Charles F. Alexander, Seldner & Enequist, Inc. The following are nominated to serve a three-year term on the executive committee: John A. Chew, John A. Chew, Inc., and Edward S. Burke, Edward S. Burke Co.

Senator Tydings Addresses Drug Ex.

The Baltimore Drug Exchange held its annual meeting December 2. Senator Millard Tydings was the guest speaker. J. F. Whitescarver, U. S. Industrial Chemicals, Inc., was chairman of the entertainment committee.

Chicago Christmas Party

The Chicago Perfumery, Soap and Extract Association, Inc., held its annual Christmas party at the Sherman Hotel, December 12. Dancing followed the dinner and floor show.

Salesmen's Christmas Party

The Salesmen's Association of the American Chemical Industry held its twenty-first annual Christmas party at the Hotel Edison, New York, December 17. Net proceeds from the party were donated to service organizations.

Bims Annual Get-Together

The Bims organization will hold its annual mid-winter get-together on January 21 at the Hotel Lafayette, New York. The entertainment committee is planning an interesting program.

Foragers Annual Banquet

The Foragers of America, the oldest organization of toilet goods salesmen in the United States, will hold its 45th annual banquet on Saturday, January 9, at the Midston House, New York.

Financial

Anchor-Hocking Earns More

Anchor Hocking Glass Corp. and subsidiaries report for the twelve months to September 30 a net profit, after $4,233,701 deduction for income and excess profits taxes of $1,295,525, equal to $1.57 a share. This compares with earnings of $1,169,134, or $1.39 a share for the preceding twelve months when the deduction for taxes was $1,205,666.

Amer. Cyanamid Nets Less

American Cyanamid Co. and subsidiaries report for the first nine months of this year, after provision of $10,600,000 for federal and foreign taxes on income and $750,000 for contingencies, a net income of $3,288,023. This is equivalent to $1.10 a share on the common stock and compares with a net income of $4,585,856, or $1.63 a share in the same period last year when the deduction for taxes was $7,871,709.

Cunningham Net Off

Cunningham Drug Stores, Inc. report for the year to September 30 a consolidated net profit, after $100,000 wartime and post-war adjustments and crediting $10,000 estimated post-war refund, was $623,429, equal to $3.20 a share. This compares with $679,956, or $3.47 a share for the previous year.

Pfizer Reports Earnings

Chas. Pfizer & Co. Inc. report for the nine months to September 30 a net income, after provision of $1,485,000 for income and excess profits taxes, net earnings of $772,323, equal to $1.54 a share. Gross sales for the period amounted to 8,207,967.

Squibb Net Lower

E. R. Squibb & Sons and consolidated domestic and Canadian subsidiaries report for the September quarter a net profit of $455,280, equal to 90 cents a share, after provision for income and excess profits taxes estimated to be $509,059, before giving effect to post-war credit of $16,349, being 10 per cent. of the tax on excess profits. This compares with a profit of $520,237, equal to 95 cents a common share for the same period of 1941 when the provision for taxes was $299,110.

Sylvania Net Off

Sylvania Industrial Corp. reports for the nine months to September 30 a net profit of $689,554, after $1,030,000 provision for taxes, equal to $1.67 a share. This compares with $829,446, or $1.98 a share earned last year in the same period, after tax provision of $830,000.

Sterling Earnings Lower

Sterling Drug Inc. and subsidiaries report for the nine months ended September 30 a net income of $5,283,574, after provision of $6,546,296 for estimated Federal and foreign income taxes, but excluding post-war tax refund. This is equal to $3.01 a share and compares with net earnings of $6,444,171, or $3.70 a share, after taxes of $4,922,971 in the same period of 1941.

For the quarter ended September 30 the net income was $1,791,984, after tax provision of $1,889,682, against earnings of $1,691,189 after taxes of $1,261,585 for the third quarter of 1941.

United Drug Net Higher

United Drug, Inc. reports for the nine months to September 30 a net profit of $1,585,628, equivalent to $1.13 a share and comparing with $1,293,912, or 92 cents a share for the same period of 1941. Federal tax provision this year was $3,724,377 against $540,045 last year.

For the September quarter the net profit was $617,489, or 44 cents a share, against $775,275, or 55 cents a share for the 1941 period.

Vadsco Reports Net

Vadsco Sales Corp. and subsidiaries report for the September quarter a net profit of $37,448, or $1.76 a share on the 7 per cent. preferred stock. For the nine months to September the net profit was $138,953, or $6.53 a preferred share.

Vick Chemical Net

Vick Chemical Co. and subsidiaries report for the September quarter net earnings, after $1,198,665 provision for taxes, depreciation and reserve, of $1,335,689, or $1.96 a share.

For the September quarter the net income was $1,082,468, or $1.58 a share, after provision for taxes of $798,683.

Walgreen Earnings Steady

Walgreen Co. and subsidiaries report for the fiscal year ended September a net profit of $3,361,469, equal to $2.27 a share on the common stock and comparing with $3,334,835, or $2.25 a common share for the preceding fiscal year. Provision for federal normal tax and surtax amounted to $1,825,000 and that for excess profits to $1,300,000, compared with $1,355,000 and $200,000 in the previous year.

Obituaries

Lewis A. Beck

Lewis A. Beck, formerly chemist for the H. B. Gilpin Co., Baltimore, died November 20. He was seventy-one years old. Dr. Beck retired in 1940 after having been with H. B. Gilpin Co. for nearly fifty years.

Claudius M. Cass

Claudius M. Cass, vice-president of the H. J. Sherwood Drug Co., Cleveland, died November 15. He was sixty-seven years old.

He was a graduate of Western Reserve University School of Pharmacy and had been associated with the Sherwood company for a great many years. He was made vice-president of the company in 1911.

A. B. Gerber

A. B. Gerber, chief chemist of the Trenton, Mich., plant of Monsanto Chemical Co. died suddenly of a heart attack November 22. He was fifty years old.

Mr. Gerber joined the Anniston Ordnance Works in 1918 after receiving a degree in chemical engineering from Purdue University. He remained as chief chemist after the plant was taken over successively by Southern Manganese Corp., Swann Chemical Co., and Monsanto. He was transferred to the Trenton plant in 1942.

Allen S. Olmstead

Allen Seymour Olmstead, LeRoy, N. Y., died November 21 at the age of eighty-six.

Mr. Olmstead developed a number of proprietary products, of which Allen's Foot-ease was the best known. Early in his career he was associated for a decade with the late O. F. Woodward, of LeRoy, in the manufacture and sale of specialties.

Hugh Peters

Hugh Peters, formerly a salesman for Thurston & Braidich, New York, died in Pasadena, Calif. October 24. Mr. Peters had retired.

George H. Patten

George H. Patten, vice-chairman and secretary of the Chattanooga Medicine Co. died suddenly at his home November 21.

In addition to being an officer of the Chattanooga Medicine Co., Mr. Patten was president of the Chattanooga Stamping and Enameling Co., president of the Thomas Coal Co. of West Virginia, vice-president of the St. Elmo Bank and Trust Co., president of the Board of Trustees of the Bright School, a trustee of the University of Chattanooga and of the Eleventh Street Realty Co.

Harry J. Schnell

Harry J. Schnell, president of the Schnell Publishing Co., Inc., New York, and editor and publisher of Oil, Paint and Drug Reporter and National Painters' Magazine, died unexpectedly November 29 in the Orange Memorial Hospital, Orange, N. J. He was sixty-seven years old and for fifty-two years had been associated with the publications of which he became owner in April, 1941.

HARRY J. SCHNELL

At fifteen Mr. Schnell went to work for the late William O. Allison, then publisher of the Oil, Paint and Drug Reporter, and he became general manager for Mr. Allison some years before the latter's death in 1925. As an executor of the Allison estate he continued his late employer's publications. In 1941 he organized the Schnell Publishing Co.

Mr. Schnell had been a resident of South Orange since 1910 and from 1929 to 1933 was president of the village. He had been a member of the Board of Education and the library association for a decade. He was chairman of the insurance committee and a member of the board of governors of the Orange Memorial Hospital, a trustee of the New Jersey College of Pharmacy, a Mason, an Elk, a former president of the Drug and Chemical Club of New York, and of the New York Paint, Varnish and Lacquer Association.

Mr. Schnell is survived by a son, Harry J. Schnell, Jr., of the Chemical Division of the War Production Board in Washington, and a daughter, Mrs. William Stuart Auchincloss, of Short Hills, N. J.

William Thorp Sturges

William Thorp Sturges, assistant to the director of Lederle Labs. Inc., died unexpectedly at his home at Germonds, N. Y., November 17. He was fifty-six years old.

T. L. Taliaferro

T. L. Taliaferro, general manager of Phoenix Metal Cap Co., died of a heart ailment November 17 at his home in La Grange, Ill. He was sixty-two years of age.

Mr. Taliaferro became associated with Phoenix Metal Cap Co. in 1913 (then the Phoenix-Hermetic Co.) after having been with American Can Co., Continental Can Co. and Hazel-Atlas Glass Co.

He was responsible for developments which have revolutionized the production and use of metal caps. The first machine for producing "flowed in" rubber composition gaskets used in

T. L. TALIAFERRO

vacuum sealing, sterlizing and processing was originated and patented by Mr. Taliaferro as were the first automatic ovens for oxidizing or baking lithograph inks, lacquers and coatings on metal plate.

He was the chairman of the first standardization committee of the Glass Container Association in 1920. In 1934 he compiled a book entitled "Standardization of Glass Finishes" which had to do with the early trials and tribulations of the committee. Upon retirement from active participation in committee work he distributed copies to those who had served on the committee with him. It is the only recorded history of the early development of this work.

Gus C. Weil

Gus C. Weil, former president of the Klinker Manufacturing Co., Cleveland, died November 15. He was seventy-five years old.

In 1906 Mr. Weil bought a controlling interest in the Klinker Manufacturing Co. and from that time until his retirement about two years ago, he was president of the company and most active in its management. His son, Leon G. Weil, who has been active in the business since 1919, succeeded him as president.

F.T.C. ACTIVITIES

Orders

United Drug Face Powder

United Drug Co., Boston, is ordered to cease selling cosmetics in packages which mislead and deceive purchasers as to the quantity of the product contained therein.

Findings are that the company packs its "Cara Nome" face powder in packages which are misleading in appearance, the size and capacity of the outside container being such as to indicate that the quantity of powder contained within the package is much greater than is actually the fact.

SNL

Cora Lee Wiley, Adel, Ga., selling "SNL" (Suffer No Longer) has been ordered to cease false advertising.

In advertisements the respondent has represented that the product is a cure or remedy for various diseases of the female organs, including gonorrhea. Actually, the findings are, the preparation has no therapeutic value in the treatment of such diseases and is made up of an indiscriminate combination of drugs which, in the proportions used and method of use, has no basis in medical science.

Bee-Dew Cosmetics

An order to cease misrepresentation of "Bee-Dew" cosmetics, recommended as hair and scalp treatments, has been issued against Vivian S. Nash, trading as Bee-Dew Cosmetic Co., Detroit.

The order directs the respondent to discontinue any advertisement which represents that "Bee-Dew Special Hair Grower," "Bee-Dew Special U-Grow," "Bee-Dew Scalp Oil," "Bee-Dew Shampoo," "Bee-Dew Pressing Oil," and "Bee-Dew U-Gro" promote the growth of new hair or constitute a cure or remedy for, or possess any therapeutic value in the treatment of, falling hair, baldness, dull hair, scalp irritation or dandruff, in excess of cleansing the hair and scalp, allaying itching due to minor scalp irritations and facilitating the removal of loose dandruff scales; or which advertisement uses the word "grow" or "grower", or any other word similar thereto in phonetics or spelling, to describe the preparations designated "Bee-Dew Special Hair Grower," "Bee-Dew Special U-Gro," and "Bee-Dew U-Gro," or which otherwise represents that any of such preparations has any effect upon the growth of the hair.

The respondent also is ordered to discontinue any advertisement which represents that the preparation designated "Bee-Dew O-No" will give complete protection from offensive body odors or have any effect in excess of affording temporary protection from such odors.

Stipulations

Koto Cosmetics

William Banks, trading as Koto Cosmetic Co., Pittsburgh, stipulated that in the sale of "Koto Cleansing Cream," "Koto Vanishing Cream" and "Koto Lemon-Almond Lotion" he will cease representing that any of these products has therapeutic value for skin troubles or is effective in preventing or curing blackheads, pimples, freckles, or wrinkles.

The respondent also agrees to stop representing that Koto Cleansing Cream is free from wax or will penetrate the pores; that Koto Lemon-Almond Lotion will whiten the skin or has been tested or approved by a chemist; or that he employs a chemist and beautician when such is not the fact.

Armi Mineral Water

Ralph R. Markwood, trading as Armi Mineral Water Co., Toledo, Ohio, agrees to cease misrepresentations concerning the therapeutic value of "Armi Mineral Water," which consists of city tap water supplemented by certain minerals in small quantities and by a relatively larger portion of sodium sulphate and through which has been conducted a current of electricity.

Markwood agrees to cease representing that the treatment of his mineral water by electrolysis imparts any therapeutic value to it; that the preparation is effective in replenishing an impoverished blood stream, in overcoming congestion in the intestinal tract; in correcting or preventing the accumulation of toxins in the system, or in invigorating every organ and cell of the body; that the preparation, when taken as directed, will constitute a competent treatment or dependable relief for anemia, appendicitis, arthritis, asthma, common colds, diabetes, gall stones, heart, liver and kidney troubles, and numerous other ailments; or that it is of any value in connection with constipation other than affording temporary relief such as is obtained by the administration of any saline laxative.

The respondent also agrees to cease use of such statements as "scientifically balanced artificial mineral water" to imply that the mineral content of the water is of such kind, quantity and proportion as to supply the bodily requirements of minerals in adequate and correct proportions, when the preparation is taken as directed.

Man-O-Ree

Charles P. Monroe, trading as Man-O-Ree Products, Greensboro, N. C., agrees to cease representing that "Man-O-Ree" is an aid to digestion; will rid the system of poisons or gases; can be relied upon to relieve gastric disturbances, heartburn, stomach disorders, nervousness, and insomnia; possesses the rebuilding qualities of a tonic, and is incapable of having any deleterious effect on the digestive organs.

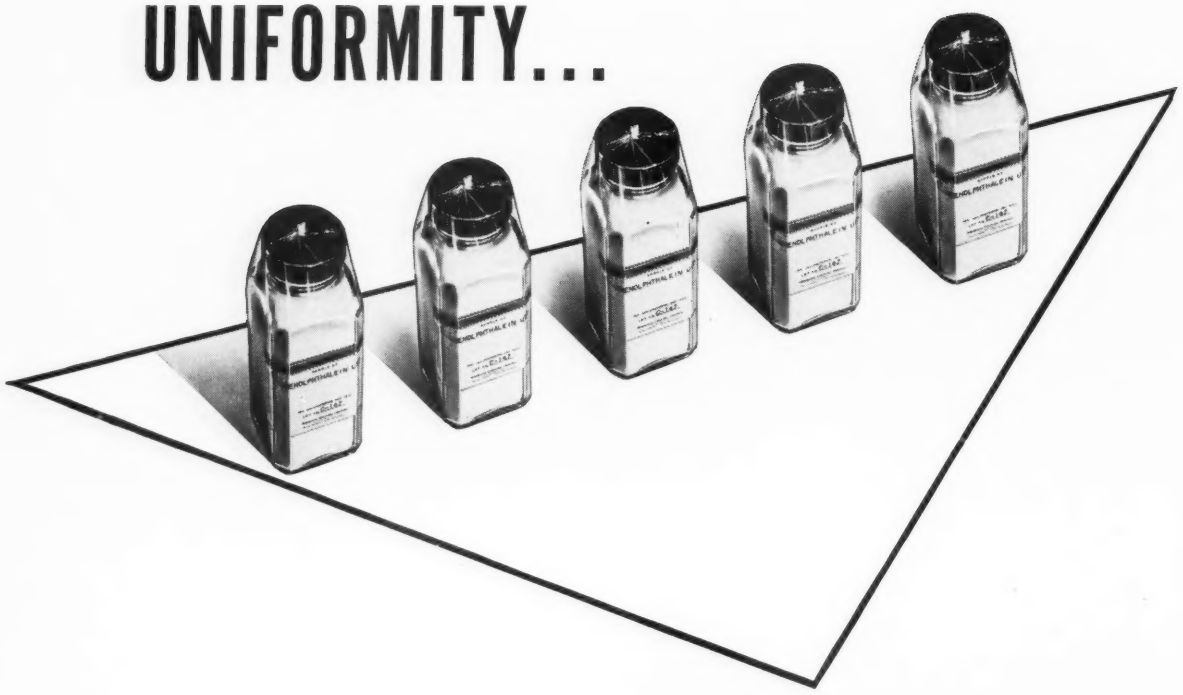
The respondent also agrees to discontinue any advertisement which fails to reveal that the preparation should not be used when abdominal pains, nausea, or other symptoms of appendicitis are present and that its frequent or continued use may result in dependence on laxatives.

Flurene Drugs

Stephen Gardner, trading as Flurene Chemicals, Ltd., Washington, N. C., agrees to discontinue representing that Flurene Nose and Throat Drops is of benefit in relieving the nasal swelling of asthma or in assisting sinus drainage; that it will prevent hay fever attacks and is a preventive of colds, and that Flurene Salve loosens phlegm or is of assistance in breaking up local congestions of the upper respiratory passage.

The respondent further agrees to cease disseminating advertisements

QUALITY
AND
UNIFORMITY...



What do they mean to you?

IN *your* business, quality and uniformity are absolute essentials . . . in your finished products . . . and in your raw materials.

One excellent way to make sure you get both those essentials in *every* shipment of pharmaceutical materials that goes into your products — look to Monsanto as your source of supply!

Every batch of *every* Monsanto pharmaceutical is carefully checked against Monsanto's high standards at *every* important step in its manufacture. For a complete list of Monsanto pharmaceuticals, their properties and uses, and for experienced technical advice, inquire: MONSANTO CHEMICAL COMPANY, St. Louis, U.S.A. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Montreal.

MONSANTO CHEMICALS
SERVING INDUSTRY...WHICH SERVES MANKIND

HELP! Prompt return of empty tank cars, carboys and returnable drums will help speed your *next* shipment of Monsanto chemicals . . . by helping to relieve critical shortages in shipping equipment.

which fail to reveal that Flurene Nose and Throat Drops should not be used in excessive amounts, or by infants and younger children except on competent advice, and that persons suffering from high blood pressure, heart disease, diabetes, or thyroid trouble should not use the preparation except upon competent advice.

Curadalis

G. A. Labrador, Honolulu, T. H., stipulated that he will cease representing that the preparation "Curadalis" will relieve or cure all types of skin diseases and relieve tropical skin diseases which occur among sugar cane and pineapple workers, or that it has any therapeutic value in excess of relieving minor skin irritations.

Beechams Pills

Beechams Pills, Inc., Bloomfield, N. J., and Atherton & Currier, Inc., New York agency agree to cease any advertisement which fails to reveal that the product should not be used when abdominal pain, nausea, stomach sickness, or other symptoms of appendicitis are present.

Kitrab Ointment

Anna Plotz, Chicago, engaged in the preparation of "Kitrab," a salve having an iodine content and alleged to be useful as a treatment for goiter and scrofula, has stipulated to cease any representation which conveys the impression that it constitutes a treatment for scrofula or goiter generally or any type of goiter other than simple goiter arising from iodine deficiency.

Complaints

Haarlem Oil

Leonard Block, Melvin Block and Betty Roberts, trading as Gold Medal Haarlem Oil Co., Jersey City, engaged in compounding, "Gold Medal Haarlem Oil," "Gold Medal Haarlem Oil Capsules," or "Gold Medal," are charged with misrepresentation.

The respondents have represented their product as an efficient, safe, and harmless treatment for ailments of the kidneys and bladder. The complaint charges these representations are false; that the preparation is not a remedy or cure for ailments and diseases of the kidneys or bladder, irrespective of the cause or condition thereof, as represented, by the respondents and that it has no therapeutic value in the treatment of diseased or injured kidneys.

The respondents' advertisements also fail to reveal that use of the preparation under conditions prescribed in the advertisements or under such conditions as are customary or usual may result in injury to health as the preparation is an irritant diuretic and its indiscriminate use by persons whose kidneys are injured or diseased may seriously interfere with their proper functioning and prolonged administration may injure kidneys that are normal.

Liberty Nasal Cream

Misrepresentation of "Liberty Nasal Cream" or "Liberty Nose and Throat Cream" is alleged in a complaint issued against Georgie A. Coleman, trading as Liberty Chemical Co., Washington, D. C.

The respondent, the complaint alleges, has represented that the preparation prevents colds and influenza; that it is of value when used externally for congestions of the chest due to colds, and that its use will afford protection from others having infectious colds.

These representations, the complaint alleges, are false and misleading as the preparation will not accomplish any of the results claimed for it.

Valmor Products

M. G. Neuman, trading as Valmor Products Co., Famous Products Co., and Madam Jones Co., 2241 Indiana Ave., Chicago, selling various Medicinal preparations and cosmetics, is charged with false advertising.

In advertisements circulated largely among members of the colored race, the complaint charges, the respondent has falsely represented that his "Skin Bleach Cream" will bleach and lighten the skin; that "Gro-Strate" will cause the hair to grow straight; that "Eau de Quinine" tonic contains a substantial amount of quinine, and that "No-Odor" and "Odor-Rid" will absolutely deodorize the body of objectionable odors.

In addition to these misrepresentations, the complaint continues, the respondent makes use of pictorial representations allegedly showing the beneficial results derived from use of certain of his preparations, particularly the change in the color of the skin from dark to light.

Advertisements of the respondent also fail to reveal, the complaint charges, the danger which may ensue to the users of certain of his preparations under the conditions prescribed in the advertisements or under conditions which are customary and usual.

The complaint charges that "Valmor Little Blue Pills with Buchu" contains the drug, powder extract Buchu and extract of juniper berries, and "Brother Johnson's American Oil Haarlem Capsules" contains sulphurated oil of turpentine. These ingredients are highly irritating in nature and their irritating action may seriously injure diseased or disordered kidneys and long continued use may cause injury to normal kidneys.

"Old Indian System Tonic," "Madam Jones Vegetable Compound," and "Valmor Red Clover Compound," the complaint alleges, are irritant laxatives and potentially dangerous when taken by one suffering from abdominal pains or other s y m p t o m s of appendicitis; "Madam Jones Female Tablets" contains the drug acetphenetidin and its frequent use is potentially dangerous; "Valmor Red Clover Compound" contains the drug potassium iodine which is potentially dangerous when taken by those suffering from arrested tuberculosis or thyroid disease; and "Valmor Headache Tablets" contains the drug acentanilid and its continued use in accordance with the directions may cause dependence upon the drug or collapse and its administration to children may be dangerous and injurious to health.

Fernet-Branca

Fratelli Branca & Company, Inc., New York, engaged in the sale of "Fernet-Branca" is charged with false advertising. The complaint charges that the respondent has represented that its preparation is a cure or remedy for stomach disorders, indigestion, headaches, insomnia, and other ailments; that it gives the body resistance to the inclemency of the weather; regulates the bodily functions and aids in digestion, and that its use will promote, maintain and improve health generally.

All these representations, the complaint alleges, are exaggerated, false and misleading, and the preparation is essentially a laxative and has no therapeutic value in the treatment of the ailments enumerated in the respondent's advertisements.

INDUSTRY'S BOOKS

Medical Parasitology, by James T. Culbertson, Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, 285 pp., Illus., Columbia University Press, Cloth, $4.25.

Malaria, sleeping sickness, and other dread diseases caused by parasitic animals have for many centuries infected a large majority of the world's population. But now, for the first time, they threaten many Americans in the armed forces, whom global war has sent to the tropics and subtropics. For this reason all branches of the medical profession in the United States are giving increased attention to animal parasites and the diseases they cause. This volume describes individually the parasitic animals which have medical importance and points out the various manners by which they establish themselves upon human beings. The precise way in which man is injured by them and the accepted methods of diagnosing the infections are stated. Finally, the steps which man can take to prevent his infection are described, together with procedures which have proved effective for eliminating the parasites from persons already infected. As a textbook for medical students and a handbook for medical practitioners, Dr. Culbertson's concise but comprehensive resume of medical parasitology will fill a definite need.

Elementary Physical Chemistry, by Hugh S. Taylor, D.Sc., F.R.S., and H. Austin Taylor, Ph.D., 551 pp., Third Ed., D. Van Nostrand Co., New York, Cloth, $3.75.

The preparation of the third edition of Elementary Physical Chemistry is the result of a desire to supplement the classical aspects of the subject, now so significantly the concern of general chemistry courses, with those newer phases of the subject which have caused physical chemistry to increase in relative importance in the whole domain of chemistry. The student of general chemistry is now thoroughly familiar with the concept of equilibria in simple systems and the elementary development of the law of mass action. The expanding science is facing the problem of equilibrium in systems where a complex of reactions simultaneously obtains. To explore such systems it is becoming increasingly necessary to make use of the statistical method of approach. As a consequence of this condition, there is added to the treatment of the second law of thermodynamics a quite elementary discussion of the statistical basis of the second law of thermodynamics which will give the student a first exposure to this increasingly important subject and will permit him to see its applicability to a few typical examples, the ideal gas law, the ortho-para hydrogen equilibrium and a simple chemical reaction. These should serve as a stimulus to further study and at the same time permit the student to recognize how the statistical theory is basically reorganizing the approach to problems of rate not only in chemical reactions but also in physical processes. These additions have, however, been so placed in the several chapters that they can, without interruption of the sequence, be omitted in a briefer treatment of the whole subject of physical chemistry. To achieve this end, it has been necessary to defer the treatment of chemical kinetics to a more usual position in the later chapters of the book. Several other chapters have undergone re-organization. These include the chapter on the solid state, that on phase equilibria, which has been somewhat abbreviated and the chapters dealing with ionic equilibria where the classical aspects have been given the briefer exposition that accords with the present status of this section.

Rogers' Industrial Chemistry, Sixth Ed., —in two vols., Edited by C. C. Furnas, Associate Professor of Chemical Engineering, Yale University, 1721 pp., Illus., D. Van Nostrand Co., Inc., New York, Set $17.

The potential audience of this book is visualized as any one with a knowledge of general chemistry, be he student, engineer, or executive, who wishes to grasp the essential features of the various branches of modern chemical industry. He will be taken on an extensive plant survey of an industry, have the essential operating features explained to him by a recognized authority in the field, and at the end of his visit be supplied with a comprehensive list of literature references for further detailed study. The framework around which this work is built can be presented in the form of four questions: (1) What are the raw materials? (2) What is done with them? (3) What are the products and for what are they used? (4) What are the important features of the economic pattern which weave the varied techniques into a workable industry? The commonest and probably the most acceptable method of presenting the study of Industrial Chemistry is to discuss the answers to the above four questions for each of the various important divisions of the industry, based on the products. The bulk of this book is devoted to this type of presentation. Although each one of the chemical industries has certain economic minutiae which are peculiar to itself, there is a broad economic back-

ground which is common to the industry as a whole. Hence the first chapter of the book is on the economic pattern. The scientific approach to the finding of the answer to the question of what is done with the raw materials has led to the formulation of the field of chemical engineering, which is organized around the physical unit operations and the chemical unit processes. These studies are most or less common to all the divisions of the industry, hence a section of the book is devoted to a brief explanation of the unit operations and unit processes, with a discussion of the equipment and materials for carrying them out. Thus the background of the whole subject is sketched in. Then follows more or less detailed expositions of the more important divisions of the industry, based on the types of products. Contents: Vol. I—Section I—Background of the Chemical Industry; Section II—Heavy Chemicals and Allied Products; Section III—Fuels and Their By-Products; Section IV—Refractories and Allied Materials. Vol. II—Section V—Metallurgical Products; Section VI—Surface Coatings; Section VII—Products of Organic Synthesis; Section VIII—Natural Organic Materials.

Without Fame, The Romance of a Profession, by Otto Eisenschiml, 368 pp., Alliance Book Corp., New York, Cloth, $3.50.

This is the autobiography of a chemist who, incidentally, has a flare for writing a dramatic account of his life, his work, and the industry he served for many years. After graduating in chemistry from the Vienna Polytechnical Institute the author worked in steel mills, glass factories, oil plants and other industries of the United States, then founded his own business. He devised one of the earliest deodorants, an analytical method now used by the U. S. Department of Agriculture, window envelopes, oiled baseball gloves, rust-proof barbed wire for the armies in Flanders and dozens of other useful contributions, large and small, which have flowed unhearalded into the stream of our mode of living. He also led valiant fights against misrepresentation of chemical products and helped write laws abolishing such dishonest practices. Without Fame reveals a new facet of Dr. Eisenschiml in addition to those of the creative scientist, the kindly businessman, the probing historian. In these pages he offers many an amusing tale, much sound advice, and a rarely matched knowledge of many people in almost every walk of life.

Principles of Roentgenological Interpretation, by L. R. Sante, M.D., Professor of Radiology, St. Louis University School of Medicine, Fourth Revised Edition, 348 pp., Illus., Edwards Brothers, Inc., Ann Arbor, Cloth, $5.50.

In this book an effort was made to present the methods used in radiological interpretation in a logical, orderly manner. As far as possible the concentration of prevailing opinion into short, concise paragraphs has been attempted. All phases of roentgenological examinations have been covered; bones, chest, gastrointestinal, biliary and urinary tracts, etc. Brief consideration has been given to roentgenological examination in many special fields. The 1942 edition has been revised and some sections have been rearranged and rewritten. This work contains 446 outline drawings and 12 half-tone illustrations.

Nasal Medication, A Practical Guide, by Noah H. Fabricant, M.D., M.S., Associate in Laryngology, University of Illinois, 122 pp., Illus., Williams & Wilkins Co., Baltimore, Cloth, $2.50.

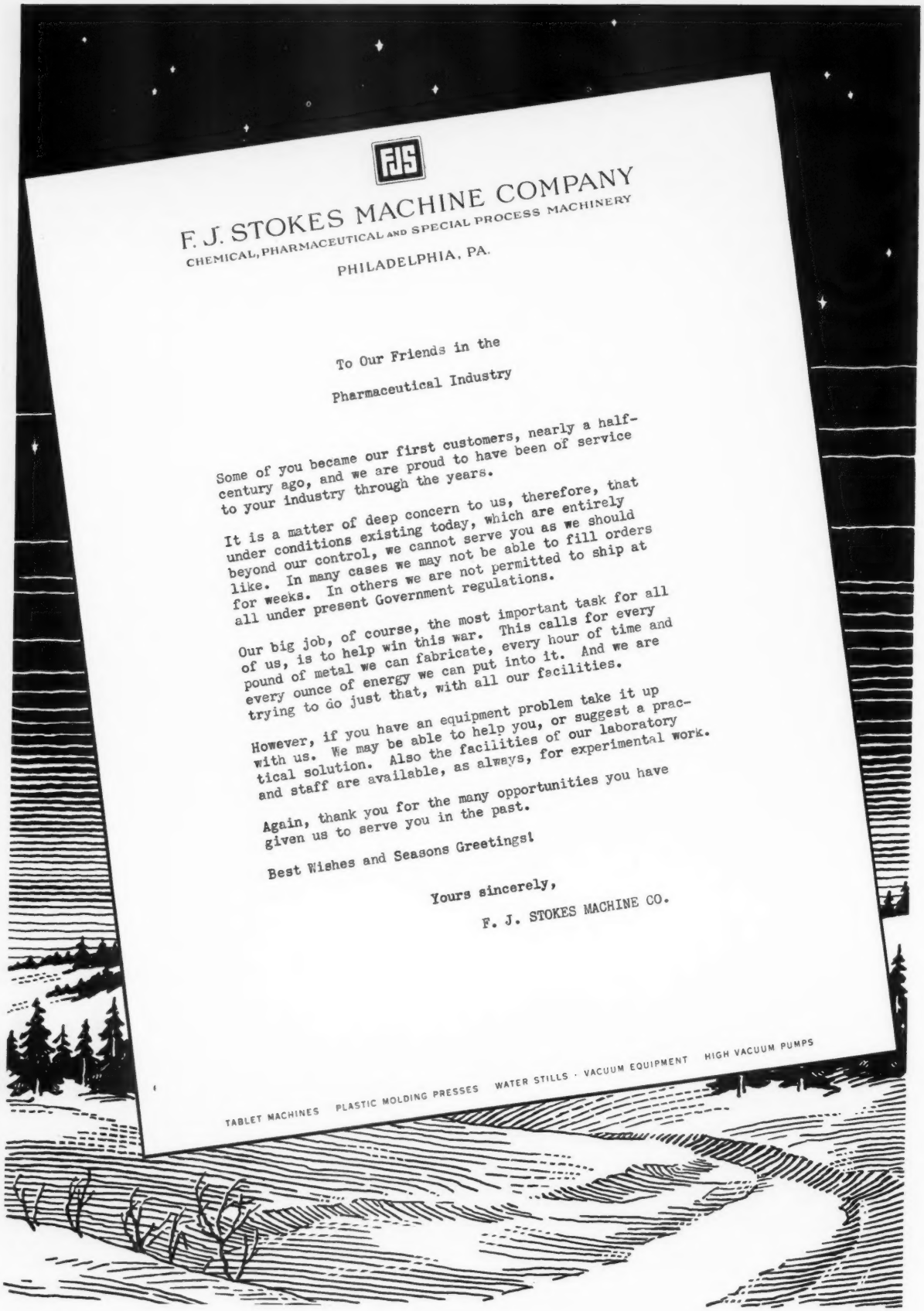
Dr. Fabricant's practical guide, the first book to be published on nasal medication, provides fundamental facts and definite clinical instructions that are both urgently needed. The use of nasal medication has become exceedingly widespread. It is employed for the relief of such prevalent complaints as sneezing, nasal obstruction, discharge, tickling, burning, itching and dryness. In part, the popularity is due to the public's growing awareness of common colds as possible forerunners of serious complications. In part, it can be attributed to convincing scientific progress. Thanks to better understanding of the physiology of the nose, the histopathology of the mucous membranes, etc., it has been possible to produce nasal medicaments that are, at the same time, effective and nontoxic. The author's investigations have exerted marked influence upon the development of these improved preparations. However, among the hundreds of preparations manufactured for public distribution, relatively few are up to modern scientific and clinical standards. Dr. Fabricant's book, by providing essential data and concise descriptions of practical methods, enables physicians to prescribe the established best in local nasal therapy. It will serve investigators and others interested in up-to-date nasal medication as a source of ready reference.

Peace Plans and American Choices, by Arthur C. Millspaugh, 107 pp., The Brookings Institution, Washington, cloth, $1.

A democratic peace, made democratically, implies a great popular debate on the questions and issues involved. The most important of these relate to the means by which world order may be securely established and war forever abolished. Numerous proposals for durable peace have been advanced. Each has its advocates and its critics. A many-sided and somewhat confusing discussion is already under way. In this book Dr. Millspaugh, without stating his own opinions and conclusions, sets up and describes about a dozen typical peace plans and gives the main arguments for and against each of them. Brief, pointed, simply written, and attractively presented, the book aims to help citizens generally to see the problem fairly from all sides and to make their own reasoned choices.

Semimicro And Macro Organic Chemistry, A Laboratory Manual by Nicholas D. Cheronis, Chicago City Colleges, 388 pp., Thomas Y. Crowell Co., New York, Cloth, $2.75.

The arrangement of the material in the manual is made according to the following plan: In the first part an attempt is made to introduce the students to the elementary technics, such as crystallization of solids, distillation of liquids, determination of boiling and melting points and of refractive indices, necessary for the preparation and properties of the simpler groups of organic compounds. The preparation of one or more compounds from each group serves to illustrate the general principles involved. This is followed by a systematic study designed to illustrate important group properties and variations of these among members of the same group. Beginning each experiment there is a brief introductory explanation relating the material of the experiment to the previous knowledge of the student and also orienting him to the work to be done. The latter part of the manual is devoted to compounds of greater complexity.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CHEMICAL, PHARMACEUTICAL AND SPECIAL PROCESS MACHINERY
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To Our Friends in the
Pharmaceutical Industry
Some of you became our first customers, nearly a half-century ago, and we are proud to have been of service to your industry through the years.
It is a matter of deep concern to us, therefore, that under conditions existing today, which are entirely beyond our control, we cannot serve you as we should like. In many cases we may not be able to fill orders for weeks. In others we are not permitted to ship at all under present Government regulations.
Our big job, of course, the most important task for all of us, is to help win this war. This calls for every pound of metal we can fabricate, every hour of time and every ounce of energy we can put into it. And we are trying to do just that, with all our facilities.
However, if you have an equipment problem take it up with us. We may be able to help you, or suggest a practical solution. Also the facilities of our laboratory and staff are available, as always, for experimental work.
Again, thank you for the many opportunities you have given us to serve you in the past.
Best Wishes and Seasons Greetings!
Yours sincerely,
F. J. STOKES MACHINE CO.
TABLET MACHINES PLASTIC MOLDING PRESSES WATER STILLS · VACUUM EQUIPMENT HIGH VACUUM PUMPS

PRODUCTION FORUM

By FRANCIS CHILSON
Production Engineer

SPRAY DRYING

The demands of the Army and the Navy for dehydrated foods have stepped up research work to an enormous degree. Numerous products are being dried without appreciable loss of color or vitamin content to an extent to which the average drying equipment manufacturer would have, only a few months ago, declared impossible. Hitherto, I have held to the opinion that spray drying was limited to large volumes such as are encountered in the food industry. But, the Bowen Research Corporation, Garwood, New Jersey, have built a laboratory unit for small batches, and this unit might very well be applied generally throughout the drug industry for the concentration of aqueous fluid extracts. I do not, of course, know as yet whether the laboratory unit was built for their own purposes exclusively or whether it will be available for those who can obtain suitable priorities. The laboratory unit is an exact counterpart of the commercial units. The Bowen system consists of an air heater, an atomizer mounted in a spraying chamber, a dust collection system, and the necessary exhaust fans and duct work. In operation the liquid is atomized into what is in effect a tornado of hot gas. Evaporation is accomplished almost instantly because each atomized particle is surrounded by an artificial vacuum caused by the low vapor pressure of the drying gas. Bowen contends that evaporation does not depend entirely on direct contact with the hot gas but also on the partial vapor pressure surrounding it. The process is, therefore, a cooling process because the energy of evaporation comes mainly from within each particle. Hence, the temperature of the particles can never exceed the wet-bulb temperature of the surrounding gas or air. One feature of the Bowen process is that it is not limited to fluids. Bowen claims to be able to dry thick pastes and heavy creams as well.

It has occurred to me that spray drying offers some possibilities in the cosmetic industry in processing face powder. It is well known that the color can be more evenly distributed in a fluid suspension than in a dry powder. As a matter of fact, the old original Tetlow process was a wet process. It was not generally utilized because of the cumbersome equipment required. Spray drying is not cumbersome and is very fast. There is a possibility that it might be possible also to incorporate the perfume with the color because the manufacturers contend, in dealing with food products that none of the aroma is lost. Since aroma in foods depends upon highly volatile essential oils, it is possible that a perfumed powder slurry could be spray dried without appreciable loss of odor. However, this is merely a brainstorm which would warrant a good bit of checking.

MATERIAL HANDLING SUMMARY

I keep hammering home the point that the major part of operating cost in the drug industry is, aside from materials, handling cost. Actual processing operations such as mixing, milling, drying, and so forth, are not expensive. The cost of getting material into and from storage points to processing points and from one processing point to another is great, since the handling of material is almost entirely a manual operation. Too often we delude ourselves by assuming that our material handling costs are limited to a few warehouse men and truckdrivers. A proper view of material handling cost embraces all movement of materials from storage points, not only to departments, but through them as well. All work simplification methods are in reality

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We would like to feel that all of the wrapping machines we have in the field are working most effectively—for the armed forces or on the civilian front . . . So during the past few months we have been locating idle machines of our make for those who need them. We do not buy nor sell these machines. We merely place the prospective user in touch with some other manufacturer who has a machine which he is willing to sell or lease.

This service has proved extremely helpful, not merely to those producing essential civilian goods, but to numerous concerns who have rush orders for the armed forces.

So if you have a machine of our make that you could release, why not list it with us? Just send us information as to its type; also our factory number.

PACKAGE MACHINERY COMPANY
Springfield, Massachusetts

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Over a Quarter Billion Packages per day are wrapped on our Machines

designed to simplify and hence speed up the handling of materials. All layout work, therefore. should be predicated upon elimination of labor in handling material; in shortening the distance the material has to travel; and to keep it moving without stoppages for any purpose whatever.

Although an encyclopedia could be written about material-handling equipment, it may be helpful to summarize here the basic devices commonly employed in the trade.

Wheel trucks. The advantage of a wheel truck consists in its instantaneous mobility. It can be utilized for transporting any type of container, and when equipped with a tank, it can even be used for transporting fluids. The disadvantage of wheel trucks as a material handling mechanism consists in the fact that there must constantly be loading and unloading.

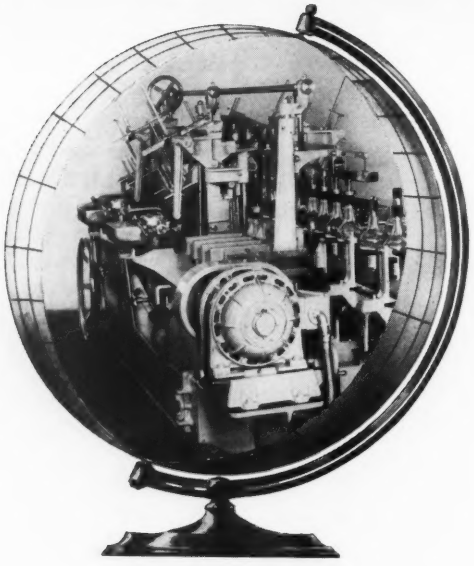
Skids. The skid and lift truck system was designed to minimize the labor required in loading and unloading trucks by establishing a unit load which could be set up at the receiving point and carried in storage on the skid until the load of material was required by an operating department. The skids are comparatively inexpensive and can be economically employed in great quantities. The disadvantage of a skid and lift truck system lies in the fact that the lift truck is itself at best an awkward device making it necessary to do a lot of running around to get the lift truck and the skid together. Secondly, unit loads on skids require a lot of storage space because skids cannot be stacked upon each other without the construction of expensive racks. Moreover, a material problem is involved in stacking and handling the empty skids.

Wheel skids and jacks. The wheel skid, which is simply an ordinary skid with two rear casters, was developed to increase the mobility of the skid and lift truck system and also to eliminate the awkwardness involved in handling the lift truck. The disadvantage of this stystem lies in the fact that wheel skids are to all intents and purposes trucks, and, hence, are comparatively expensive where a great number are required, since the only difference between a truck and a wheel skid consists of two wheels or casters. Also wheel skids cannot be stacked at all. When it is necessary to move a wheel skid, a certain amount of running around must be done to get the jack so that the skid can be moved. In operations where skids are used in a limited area and are frequently loaded and unloaded such as a shipping department, the wheel skids have many advantages over the conventional lift truck and skid system.

Pallets. Pallets are a recent innovation designed to make it possible to stack unit loads and thus utilize air space for storage purposes as well as floor space and also to reduce the cost of the platforms or skids. A pallet is nothing more than a flat crate made of cheap wood. In a plant having sufficient volume to justify the operation of a power operated lift truck, the pallet and lift trucks system afford, in my judgment, the most economical means of handling material. A unit load can be set up at a receiving point, it can be picked up by a power operated lift truck, it can be elevated as the truck travels, and two or more loaded pallets can be stacked one upon the other depending upon head room. The loaded pallets can be removed from storage and transported to the processing centers in the same way. Hand operated lift trucks have been developed for handling pallets. Pallets are recommended only when volume justifies the power operated lift truck. A hand lift truck and pallet system has no advantage over the skid and lift truck system excepting in the cost of the pallets. The empty pallets also have to be stacked but are easier to handle and stack than skids.

Conveyors. Conveyors are highly overrated as a means of handling material excepting when they are used to transport materials between one multistory building and another, and when they can be employed for handling a large volume of fairly uniform packages or containers. A conveyor system can be used for transporting cases and other regular shaped containers within certain size limits. A conveyor system, unless it is composed entirely of driven belts, which are too expensive for this industry, cannot be used for transporting a miscellany of containers such as barrels, bags, bundles, and boxes of various shapes and sizes such as are common in our trade. Conveyors are ideal, when the product to be carried is uniform and can be kept on the move from the point of origin to shipping point. When a conveyor system is used for intermittent movement of material, as for instance when incoming material is stored in a warehouse, the system is expensive. One man must load the conveyor at the receiving point and another man in the warehouse and possibly two or three, depending on how high the stacks are, must take the cases off and pile them up. When the cases of material are required in production, one or more men must take them down from the stacks and load the conveyor again. Once loaded conveyors provide continuous movement, and, hence, have a general application in this industry wherever multistory structures are utilized. They obviate the waiting time at the elevators. When a sufficient length of a conveyor is installed, the conveyors in effect become mobile storage units, and, hence, can be made to keep cases of material flowing constantly to production lines.

These are the basic material handling systems (monorail systems can be classified as conveyor systems). In a trade like ours, having to deal with a multiplicity of products and a great variety of container styles, shapes, and sizes, it is fair to state that no one material handling system provides the complete answer. Depending on the products manufactured and the style of building involved, I have used all of these systems at one time or another, and sometimes have used them all together in the same plant. In two recent instances where I had an opportunity to determine the style of the structures before they were built, I used wheel skids and jacks in the shipping department for the assembling of outgoing



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Now, reports from the field confirm the soundness and stamina of WORLD construction and workmanship. However long or arduous the service, users of WORLD Labelers can continue to rely upon them to do the job. Reasonable care and prompt use of our experience and service facilities whenever needed will give you a WORLD of good labeling as long as the emergency lasts.

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Builders of World Automatic and Semi-Automatic Labelers for Every Purpose

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orders; I used a mono-rail system for the assembly of customers' orders in the finished stock room, and a power operated lift truck and pallet system in the warehouse and conveyors in the packaging departments. In selecting a material handling system, remember that it must justify its cost. Keep your eye peeled and your pencil sharp.

FLOOR PATCHER

INSTANTUSE is a ready-mixed floor patch that enables repairs to be quickly made to ruts and holes and the floor used immediately without any time whatever being required for setting or hardening. No special skill is required to apply INSTANTUSE. Any handyman can easily do it.

The speed and ease with which INSTANTUSE is applied means that there need be no costly interruption in production, no tie-ups in busy traffic lanes, shipping platforms, plant floors, and so forth, while the job is being done. There is no need for a regular maintenance crew—much less for a crew to work overtime in time-and-a-half.

FILLING MACHINE

Scientific Filter Company, 3 Franklin Square, New York, New York, has introduced a new filler. A conveyor belt forwards the container to be filled with liquid to an adjustable star wheel which brings it into position under the delivery spouts. Here as each container comes into position, the spout above it makes sealing contact with the container opening. A partial vacuum is established by the action of a motor-driven vacuum pump, and the gravity flow is opened from the overhead supply tank. There is no overflow or dripping of the excess liquid when the container is completely filled as it is drawn back into the reservoir. The low vacuum besides speeding the flow of the liquid, also detects any leaks or cracks in faulty containers, and also serves to remove foam. Operation can be on gravity.

The head assembly is comprised of nine to eighteen spouts depending on the capacity of the containers. Nine spouts are used for containers of 2-ounce to 1-gallon capacity, and the eighteen spouts are for 2-ounce to 1-quart units. Any shape of container having its fill opening at the top can be handled by this new machine, and adjustment is made for a varying container height by the use of spacer collars on the spouts and by the raising and lowering of the head assembly. Stainless steel is used for the parts coming in contact with the liquid.

POWDER FILLER

Wright's Automatic Machinery Company of Durham, North Carolina, has just developed a new powder filler. Semi-free-flowing varieties of dry materials such as tooth powder and dehydrated foods are filled into containers in measured amount by this new automatic machine. Glass, tin, and cardboard containers with open tops approximately the diameter of the container body can be set up. An overhead bin normally provides the material feed, and this machine is applied in a conveyor line that brings empty containers into place and removes filled ones. An assembly complete with feed and delivery conveyors measures 12 feet in length, 49 inches in width, and approximately 80 inches to the top of the material-feed chute.

It is on the rear one of the two parallel conveyor belts and from the left that empty containers approach and ride into position one at a time under four feed funnels assembled to index above a ramp. As the empty container moves upward on this ramp, the lower section of the feed funnel enters the opening of the container and then both index together into filling position under a measuring head known as the AutoBal. The overhead supply sends the material down to this head, which, in turn, delivers a measured amount into the container through a funnel before the ensuing index movement brings funnel and container into place under a vertical reciprocating plunger. The material is completely compressed into the container by the means of this plunger, and as soon as it retracts, the filled container is lowered from the funnel and ramp into a position on the delivery conveyor where it rides along until removed from the left.

BLENDER

If you have large quantities of free-flowing materials to blend, you can use a mixer such as MacClellan batch mixer or the dry blender produced by the Patterson Foundry and Machine Company, East Liverpool, Ohio. These machines consist essentially of a vertically mounted mixing drum having a cylindrical center section and conical ends. The drum trunions are mounted at right angles to the cylindrical center section so that the cones rotate end to end. In the MacClellan mixer a series of baffles facilitate the blending operation. The Patterson mixer has none. In describing the equipment you might like to get, it seems desirable, whenever pos-

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In hundreds of manufacturing plants where goods are packaged and sealed or labeled: where economies in motion, time or production run into measurable sums, the New Jersey Machine Corporation has established a reputation for co-operation carried on by *all* its employees whether on the sales force, the designing staff or the erection engineers. It's another reason behind the unprecedented demand for Labelrites.

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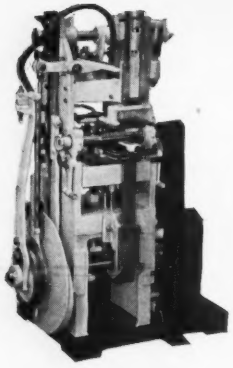
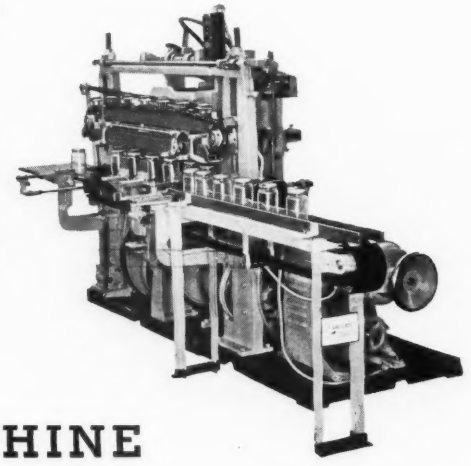
The men who install New Jersey Machines, like Kurt Niemeier, shown at the left exemplify this type of service. Their task is more than mere installation. They make certain, when a unit is installed, that the plant mechanic understands the machine, and the operator is thoroughly familiar with its operation. They do more, when the opportunity presents itself, for they often make suggestions resulting in worthwhile economies. They are "on the job" and they *know* their job!



The above illustrations were taken in the modern plant of Abbott Laboratories, Inc., North Chicago.

We appreciate the friendships we have made in the industries we serve, and even though priorities are restricting our present efforts to Defense work, we welcome inquiries on problems that might be solved by our knowledge of economies in production.



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sible, to mention substitutes. You can get a similar mixing action by using a square wooden case mounted on trunions at diagonal corners. If you can't get steel for the shafting and the trunions, you can make them with a couple of floor flanges and some scrap pipe.

WOOD MIXING TANKS

In order to best serve the Process trade during this emergency, H. K. Porter Company, Inc., 4930 Harrison Street, Pittsburgh, Pennsylvania, have added to their Process Equipment line Agitated Wood Tanks made from cypress, redwood, long-leaf yellow pine, fir, oak, and popular and equipped with Porter Better Built Agitators.

Wood tanks for the storage of water, oil, chemicals, and various solutions for pickle processing, vinegar generating and many other purposes may be obtained in all shapes and sizes, including cylindrical, rectangular, elliptical, up to 100,000 gallons capacity.

SPEEDING GRINDING

SAFE speed-up of existing pulverizing or grinding equipment while at the same time reducing human supervision to an absolute minimum, is being achieved in many plants these days by means of the Mosher automatic control of mechanical feeders.

This is an ingenious, simple, foolproof device employing electronic tubes and relays, automatically controlling the feeding rate of grinding equipment and providing warning signals for serious overload and underload conditions. The feeding rate is automatically regulated in accordance with different materials or batches. The automatic control operates the grinder at close to the maximum rated capacity of such equipment, or 20 to 25% above normal safe operating capacity in the absence of such critically regulated feeding. An installation grinding one ton per hour shows an average of 750,000 pounds more output per year for existing equipment with such automatic control. Also, by warning instantly of overloading, underloading, failure of grinder to discharge, noload, empty bin, arching over, etc., the equipment is kept operating with minimum lost time. Lastly, the equipment is adequately protected against damage and excessive wear, despite speed-up, and regardless of the human element.

Housed in a compact metal cabinet with front panel carrying the control knob and warning lights, the Mosher automatic control is applied to existing grinders and automatic feeders. The installation is simple and moderate in cost. The control pays for itself out of increased production output, within a few months, not to mention reduced manpower savings. Data covering its application to any existing equipment may be obtained from Max Mosher, 130 West 42nd St., New York City.

LIFT-TRUCK STORY

Production and management men alike will find both their fundamental and controversial questions about lift-truck equipment answered clearly and concisely in a new, complete manual just issued by Towmotor Company, Cleveland, Ohio. Believed to be the most comprehensive analysis ever developed in the industry, "The Inside Story of Towmotor" explains what a lift truck really is, tells what performance can be expected of it, and sets up logical yardsticks of comparison, enabling purchasers to determine whether the equipment they are considering is most suitable for their particular handling problem. The book enables the operative executive to quickly and clearly establish the points that must be considered when choosing a lift truck. Written simply and well illustrated with diagrams and photographs, the manual translates basic engineering principles of functional lift-truck construction into terms readily grasped by even those now completely unfamiliar with this type of materials handling equipment.

Free copies of this important addition to the data library of every plant operations and equipment specifications man can be secured by writing to Towmotor Company, East 152nd Street, Cleveland, Ohio, and stating that announcement of publication was seen in this magazine.

SAVING MACHINES

Package Machinery Company has issued a folder telling how to care for packaging machinery to make it last for the duration. Also it tells of old machines that are now being brought back into service by manufacturers to wrap Army rations and other needed war goods. In the care of machines, the folder advises placing the responsibility upon one person, preferably your most experienced mechanic or maintenance man. Cleaning is the first step in proper maintenance, luke warm water and soap being used at least once a day. Live steam and air are liable to blow particles into the machine and cause trouble. Brass parts are easily damaged, and a screwdriver should not be used to force foreign matter from such parts. Lubrication should be carefully watched, and adjustments of the machines should be carefully performed so as to minimize wear.

Good Form

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but your patriotic duty to keep your production equipment operating at its maximum efficiency. Never before has the demand for economy, speed and accuracy been so essential in the great task before us. Your possession of U. S. Machines enables you to meet these demands if your equipment is at its best. Call on us that we may service your equipment—that you may better serve your country.

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● APPLICATIONS. *Drugs:* stable emulsions, as mineral oil or agar; to grind and disperse magnesium hydroxide for milk of magnesia; grind glands, chick embryos and tissue for serums and vaccines; grind and smooth salves and ointments; produce colloidal bismuth.

● *Cosmetics:* to grind lipstick; emulsify oils and base for creams; homogenize hand lotions; grind and smooth creams and ointments; impart high gloss to creams.

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Cassia Oil

(*Continued from page 659*)

and Hoffman. Furthermore, the residue should be tacky, but not hard and brittle. According to D. Allen,[1] formerly of Hongkong, the residue should not be greater than 5 per cent. for a pure oil. As W. Treff[2] has pointed out, the distillation should be carried out rapidly, since the amount of residue obtained is greatly dependent upon the rate of distillation.

A further indication of the presence of rosin is given by the Acid Value of the oil: an oil with an Acid Value greater than 15 should be looked upon with suspicion. However, it must be borne in mind that occasionally a pure oil will have a high Acid Value, especially if the oil is old or has been stored improperly.

Mineral Oil

Mineral oil fractions, particularly kerosene, have frequently been added to cassia oils. The addition of large amounts of such adulterants will lower the specific gravity and index of an oil and render the oil less soluble. A combination of rosin and mineral oil fractions will change the properties but slightly.

> Place 100 cc. of the oil in a 250 cc. Ladenburg flask and distill slowly at atmospheric pressure over an open flame: collect the first 10 per cent. of the distillate. Test the solubility of this fraction in 70 per cent. alcohol. If a clear solution is not obtained in 10 volumes of 70 per cent. alcohol, subject 5 cc. of the distillate to fuming sulfuric acid according to the official USP test for mineral oil.

In the event that only small amounts of kerosene have been added, it is best to test the non-aldehyde portion of the oil, obtained after treatment with a saturated solution of sodium bisulfite, with fuming sulfuric acid: as little as 2 per cent. adulteration with kerosene may be detected in this manner.

Other Properties

The specific gravity, refractive index, optical rotation, and solubility of cassia oils should be determined in the conventional manner.

CHEMICAL CONSTITUTION OF CASSIA OIL

For a detailed description of the chemistry of cassia oil, we refer to Gildemeister and Hoffmann's textbook, *Die Atherischen Ole*, Third Edition, Volume II, page 627. Suffice it here to enumerate the constituents so far identified:

Cinnamic aldehyde

> More than one hundred years ago, Dumas and Peligot recognized this aldehyde as the main constituent of cassia oil. Genuine cassia oils of good quality contain from 90 to 95 per cent. cinnamic aldehyde; oils distilled from very young twigs may contain as little as 70 per cent., but this is quite unusual.

o-Methoxy cinnamic aldehyde, $C_6H_4 < {OCH_3 \atop CH=CH \cdot C < {H \atop O}}$
(Methyl o-cumaric aldehyde)

> This compound, which was identified by Bertram and Kursten,[1] separates occasionally from very old oils in the form of yellow hexagonal crystals; the odor is lasting and not very agreeable.

Cinnamyl acetate and small quantities of
Phenyl propyl acetate; identified by the Schimmel chemists.[2]

Aside from the above mentioned constituents, there exist in cassia oil very small quantities (0.5 per cent.) of compounds which, nevertheless, exercise considerable influence upon the odor of the oil. Dodge and Sherndal[3] proved the presence of:

Benzaldehyde (not more than traces)
Salicylic aldehyde (not less than 0.5 per cent and not more than 0.6 per cent.)
Methyl salicylic aldehyde
Coumarin
Benzoic acid
Salicylic acid
Cinnamic acid.

The latter acid originates evidently from the oxidation of cinnamic aldehyde. It attacks the lead containers which the native distillers use for shipping the oil and causes crystalline sediments of lead cinnamate. These sediments, however, can be eliminated by shaking the oil with about 1 per cent. of tartaric acid, allowing it to settle for 24 hours, and filtering off the floculent precipitate.

It is interesting to note that cassia oils, unless abnormally old, usually do not contain more than 1 per cent. of cinnamic acid, despite the fact that cinnamic aldehyde as such quite easily oxidizes into its corresponding acid. It has been claimed[4] that such oxidation in cassia oil is retarded by the presence of cinnamyl acetate which seems to act as an anti-oxidant and preservative. There exists, however, no definite proof that this retardation is caused by cinnamyl acetate, and not by other constituents of cassia oil.

1. Private communication to the author.
2. *Zeit. f. Angew. Chem. 39*, (1926), 1308.

1. *Journ. f. prakt. Chem.* II, 51 (1895), 316.
2. *Bericht Schimmel & Co.*, Oct. 1889, 19.
3. *Journ. Ind. Eng. Chem. 7* (1915), 1055; *10* (1918), 1005.
4. *Bericht Schimmel & Co.*, Oct. 1890, 10.

TOTAQUINE PRICES SET

Totaquine, the mixture of alkaloids of cinchona which is now official in the U. S. Pharmacopoeia and which is now being used to treat malaria among civilians in this country, has had a price ceiling established by OPA. Since only a few sales of Totaquine were made on an experimental basis in March, 1942, and at the higher prices which always apply to sales of this type, a specific maximum price regulation for the product was deemed advisable. After conferences with the industry and government officials, the maximum price was established at 40 cents per ounce in bulk quantities. Specific prices have also been set for the powder, tablets, and capsules at all levels including manufacturing, wholesaling, and retailing. Customary differentials as to the quantity of the sale and size of container and mark-ups for various levels which have prevailed in connection with the production and sale of quinine sulfate have been employed to set up these prices.

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TOOTH PASTE

The United States Government issued on November 15, 1937, a Federal Specification (FFF-D-191) for tooth paste purchased for use in government hospitals and similar institutions. The specification, elaborated by a U. S. Treasury Department Committee, gives the assurance that only first quality tooth pastes would be admitted for government purchases. The American Dental Association, dental schools or other interested agencies use the specification for examination of the more or less popular brands of tooth paste. The following condensed items of the specification may be here of general interest:

The tooth paste, when applied undiluted to the mucous membrane of the cheeks and gums for a period of two minutes, shall not produce irritation or unpleasant symptoms. The flavor shall be distinct and pleasant. The tooth paste shall extrude from the tube in a continuous mass at a temperature of 10° C. (50° F.) without the application of excessive force, such as would cause injury to the tube. When extruded from the tube (orifice down) to a length of 10 mm. at a temperature of 20° C. (68° F.) the paste shall remain attached to the tube for at least fifteen seconds. The tooth paste shall not segregate, ferment or deteriorate when cooled to a temperature of – 15° C. (5° F.) for one hour or when heated to a temperature of 50° C. (122° F.) for seventy-two hours.

Apart from the inorganic detergents, the minimum of which is limited to 40 per cent (by weight) of the tooth paste, the following detergents, preservatives and flavors are limited in their use (if used) as follows: soap (hard or soft) U.S.P. XI (not over 20 per cent), sodium benzoate (not over 2.5 per cent), thymol (not over 0.1 per cent). The use of one or more of the following detergents, plasticity and acidity regulators in proper amount is permitted: bicarbonate, borate, carbonate and chloride of sodium; boric, citric and acetic acid, cream of tartar, gum karaya and tragacanth, Irish moss, petroleum jelly, mineral oil, alcohol, ethylene glycol, glycerin and water. Tooth paste shall not contain appreciable amounts of commonly recognized toxic constituents. The *p*H value for the tooth paste, when diluted with four parts of water to one part of tooth paste (by weight), shall be greater than the number 4.9 and less than the number 10.1.

The tooth paste shall not scratch glass when placed on it and rubbed with a copper alloy similar in composition and shape to the 5 cent coin which has previously been rubbed against glass without scratching. The glass shall be the usual soda-lime grade such as is used in non-corrosive microscope slides.

As regards packaging, the usual tubes with a screw cap shall not be attacked, chemically, by the tooth paste. Tubes shall be of tin or aluminum. The area of the orifice through which the paste is to be extruded shall be greater than 13 square millimetres and less than 36 square millimetres. Unless otherwise specified, each tube shall contain not less than two ounces of tooth paste.

According to the Swedish dental authority, Naeslund, a higher alkalinity than 9.0 *p*H is harmful to the gums and mucous membrane of the cheeks, if such a tooth paste, powder or mouth wash is habitually used. The natural function of several salivary glands in the mouth is also affected, as well as a decrease caused in the digestive ferments, ptylin and mucin. On the other hand, according to the research work of Schoenbeck, Naeslund and others, tooth pastes with less than 5.0 *p*H value may do the same harm and, in addition, they may slowly but surely hasten the progress of caries by a dissolving action on the softer bone tissue of the tooth not protected by enamel.

The part that glycerin plays in a tooth paste is chiefly prevention of hardening during prolonged storage periods. If, however, the proportion of the emulsifying agent is insufficient or excessive, or other anti-stability errors occur in the formulation, no glycerin, ethylene glycol, sorbitol or any other higher alcohol can save the tooth paste from segregation, hardening or similar storage troubles. A good many substances are advertised as "glycerin substitutes." Most of them are aqueous emulsions of organic or inorganic colloids such as alginates, cellulose-ethers, colloidal alumina, bentonite, solutions of sodium lactate, etc. The skilled and proper use of these emulsions and emulsifying agents may lead to satisfactory results.

The main problems that tooth paste manufacturers have now to face, however, are the difficulties in getting collapsible metal tubes and board for packing.

To coat a lead tube properly with tin, several technical conditions have to be fulfilled. Extremely hard, sharp and highly polished tools, a good lubricating liquid, 5 to 7 per cent tin content in the lead-tin alloy to be coated, figuring as "lead-straps," and a tin layer of 0.0035 mm. thickness, corres-

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ponding to 0.24 g. per 100 cm.; all these factors are essential to produce a homogeneously tinned lead tube without any cracks in the tin surface. As regards the trimmed nozzle end of the tube—where the lead lies uncovered—a satisfactory solution has been found in pressing a thin tin shoe against the nozzle on a supplementary tool.

After the war there is no doubt that the most irreproachable tube from the hygienic point of view will be made of aluminum. The technique of softening the aluminum tube metal and providing a flexible and durable inner lacquer coating—resistant against any chemical aggression from the tooth paste—is so highly developed that it is likely that these tubes may entirely supersede those of pure tin in the future. Even these latter tubes may deteriorate through corrosion if the *p*H value of the paste exceeds 9.0 or is less than 4.9. In such cases even 10 or more per cent of glycerin content in the tooth paste emulsion does not prevent corrosion, supposing the storage of the tooth paste exceeds one year. *H. J. Strausz, Soap Perfumery Cosmetics.*

SKIN pH AND CREAMS

Although the role of the skin's "acid mantle" is not known, in the absence of convincing proof to the contrary, external preparations should be formulated in such a way as not to interfere with its function, whatever that may be.

Sweat has been found to be bactericidal and fungicidal, and, furthermore, since the normal skin swarms with various organisms, including staphylococci, diphtheriods and monilia, without being diseased, it is logical to assume that the skin surface must possess an antibacterial activity of some sort which reduces the pathogenicity of the organisms without destroying them. The "acid mantle" of the skin may preserve the protective factors of the skin and that an unfavorable *p*H might impair them.

Skins which are incapable of neutralizing alkali solutions placed upon them are more easily sensitized to external allergens and alkalinity is an important factor in the production of eczema by soap. Acids can also irritate the skin, perhaps through the hydration and swelling of proteins.

In addition to the possible influence of *p*H on the defensive processes of the skin, the respiration of the skin has been termed a more accurate measure of its vitality than any other of its functions and it has been found that deviation of its *p*H from normal is reflected in a lowered tissue respiration.

Not much is known as yet concerning the abnormal *p*H of diseased skin but the clinical use of buffered ointments, creams and lotions may serve to correct an abnormal *p*H, making the prevailing conditions unsuitable for the growth of bacteria. Until recently most emulsifying agents were largely soaps which were incapable of being rendered neutral or acid, but the newer materials make it possible to adjust these preparations to varying degrees of acidity or alkalinity within the limits which would be desired.

The normal *p*H of exposed skin may range from 4.2 to 5.6, with an average of from 5.3 to 5.6.

The choice of the emollient for an ointment or cream depends upon the degree of penetration desired. The animal and vegetable oils and fats, oleic acid, lard, goose-grease, lanolin and cod-liver oil are readily absorbed by the skin, while mineral oil is not. The penetration of various oils may be related to their oleic acid content; oils having the highest oleic acid content providing the greatest penetration.

Oil	*Oleic Acid Content, Per Cent*
Almond	77
Apricot kernel	65
Avocado pear	80
Arachis	60–70
Blepharis edulis	73
Caper spurge seed	92
Cashew nut	74
Cottonseed	23–35
Linseed	8–12
Macassar	61
Olive	80–85
Raisin seed	32–44
Sesame	38–48
Soya bean	25–33
Tea seed	83
Walnut	17–28

R. G. Harry, Brit. J. Derm. and Syph.

PRECIPITATED CHALK STANDARDS

The Board of Standards of the Toilet Goods Association has issued the following standard for precipitated chalk for use in toilet preparations. The product must be white, without odor or taste. It must assay at least 98 per cent. calcium carbonate, contain no barium, and meet test requirements with respect to heavy metals, magnesium and alkalies, and iron, using U. S. Pharmacopoeia methods. T.G.A. methods are used in determining allowable maxima for acid insoluble (0.1%), arsenic (2 p.p.m.), lead (20 p.p.m.), and sulfide sulfur (none). T.G.A. methods are used to test apparent density, particle size, and rattle point and flow point.

AMMONIA SUBSTITUTES

We recently came across a published suggestion that a pretty fair acting permanent waving solution can be made by replacing the volatile alkali with fixed alkali, using equivalent weights. By fixed alkali is obviously meant sodium or potassium hydroxides. As far as we know, the only logical substitution lies in building up equivalent hydrogen ion (or hydroxyl ion) concentrations, which, in a complex mixture, can only be done by trial and error determinations. Weight for weight or equivalent weight substitutions can be correct only by accident. Careless substitution may easily result in serious damage to hair and scalp, since the caustic alkalies are active destroyers of living tissue.

GERMAN IODINE SUBSTITUTES

With the extreme scarcity of iodine in wartime Germany, numerous substitutes for this antiseptic have appeared on the market, according to an unofficial report to the Government. Some are compounds of bromine, which is plentiful in the Reich, but none contains even small amounts of iodine.

In spite of claims to the contrary, the germicidal value of these substances has not been convincingly shown. Actual tests have proved at least two of the substitutes are greatly inferior to iodine in potency. This was particularly true in the treatment of fungus infections of the skin, which are now greatly on the increase in Germany.

BORAX AND BORIC ACID SUPPLIES

In a recent article we suggested that supplies of boric acid and borax were short and that substitutes might well be sought. We are pleased to report that this is entirely incorrect. Available stocks of borax might truly be termed unlimited, and while Boric Acid is not quite in the same class, there is a plentiful supply at present and there are no immediate prospects of any shortage. The WPB recognizes the availability of both Boric Acid and Borax, as these are not subject to priorities or allotment, and anyone wishing to do so is permitted stock ahead on these items.

We don't like to be wrong more than anyone else does, but we are really pleased to make this correction, since there are enough real shortages plaguing the industry without the introduction of false ones.

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- *thoroughly neutral taste*
- *total absence of free alkali*
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- *resistance to varying temperatures*
- *good meshing quality*
- *a non-rancid, non-hardening, fine-looking finished product*

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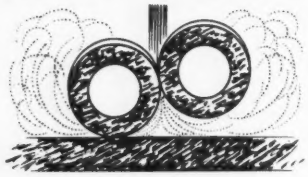

To insure against discoloration and rancidity which usually develop from excessive heat in the process of milling, Hopkins' Neutral Powdered White Soap is milled between slow geared chasers (only 70 rpm). This method is slower and more painstaking, yet our prices compare favorably with lesser qualities, due to our large production.

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Perfumers Shelf

FLORAL ODORS

Current favorites in the flower perfumes are Magnolia, Spring Lilac and Forget-Me-Not. Also popular are Apple Blossom, Gardenia and Muguet. The chief point about sponsoring odors of the apple blossom, magnolia and myosotis (forget-me-not) types is to recreate successfully the conception that the general public has of these odors, rather than the actual odors themselves. It is a fact that if you copy exactly a natural odor with which people are not too familiar, it very rarely proves a seller.

Felix Cola's formula for "Magnolianys" seems to possess the essentials of the actual odor, as opposed to what people expect. In it one can see the insistence on a characteristic sharp lemon note similar to that found to a minor extent in certain roses; this is given by citral, lemon terpeneless and nerol. The only concessions to public taste are farnesol, ylang and musk ambrette. Here is the formula:

Nerol	300 parts
Neryl acetate	100 "
Citral	40 "
Farnesol	50 "
Musk ambrette	20 "
Lemon oil, terpeneless	50 "
Ylang, Bourbon	120 "
Hydroxycitronellal	120 "
Ionone alpha	50 "
Cinnamic alcohol	140 "
Styralyl acetate	10 "

W. A. Poucher's ideas on the subject are rather similar, although the results are obtained in a somewhat different way—with orange blossom and verbena fortifying lemon terpeneless. The magnolias always contained an ambreine.

The popular conception of Magnolia seems to be a rather heavy, sweet odor of the lily type, indicating the use in fair quantity of linalol, hydroxycitronellal and ylang, together with traces of vanillin and exaltolide. What the public demands is a balanced smell, not too cloying, which leaves at all stages of evaporation a pleasant freshness. Bearing these facts in mind the perfumer can, within wide limits, let his fancy roam at will—always providing, of course, that he has the material to play with. Here is a suggested schedule or list of constituents for *MAGNOLIA:*

Basic Ingredients:
- Linalol
- Phenyl Ethyl Alcohol
- Bergamot Terpeneless
- Amyl Salicylate
- Hydroxycitronellal
- Isoeugenol
- Rose Otto
- Ylang-Ylang

Fixators:
- Coumarin
- Heliotropin
- Musk Ambrette
- Ambrette Seed oil
- Exaltolide 10% } traces
- Vanillin }

Modifiers:
- Ionone B.
- Jasmin Synthetic
- Geranyl esters
- Lavender Terpeneless
- Methyl Benzoate
- Civet artificial
- Higher fatty alcohols

Diluents:
- Benzyl Salicylate
- Terpineol extra

Myosotis, or forget-me-not, has very little odor in nature, although a large bunch appears to give a faint, elusive fragrance of the dry, earthy type, having a certain remote resemblance to reseda, mimosa and—strangely enough—night-scented stock. This odor might be based on patchouli, ionone and methyl ionone, vanillin and coumarin, vetivert, musk ambrette, orris and cinnamic alcohol. Styrax, sandalwood, aurantiol and—possibly—isoeugenol, might find application. The bouquet, could consist of a very little jasmin, ylang, bergamot or terpeneless lemon, together with hydroxycitronellal.

Gardenia. Very little is known of true Gardenia flower oil. E. Parone was the first investigator to examine the oil (*Boll. Chim. Farm.* 41, 1902, 489). Parone collected the oil from the fresh flowers during the flowering period, by the maceration process, by means of petroleum jelly, obtaining a yield of 0.0704 per cent of gardenia flower oil. He found as the main constituent benzyl acetate, while styrolyl acetate was present (giving the characteristic odor), in addition to linalol, linalyl acetate, terpineol, and methyl anthranilate.

As a base for Gardenia Perfumes one customarily utilizes styrolyl acetate, amyl benzyl oxide, benzyl acetate, methyl ionone and phenylethyl alcohol. The vanilla odor is practically essential but can, as usual, be easily overdone. Constituents of the "bouquet" include ylang, tuberose, jasmin, neroli and rose de Mai. As modifiers, one may have recourse to hydroxycitronellal, linalol, linalyl acetate, terpineol, heliotropin, geraniol, methyl phenyl acetate, dimethyl benzyl carbinol and its acetate; also bergamot and sweet orange (high note) and sandalwood (low note) oils. Fixatives include styrax, coumarin,

labdanum and Tolu balsam. Amyl cinnamic aldehyde is a useful constituent, if not utilized in excess. Traces of g a m m a undecalactone, occasionally known as "peach aldehyde," are sometimes to be recommended; as are also traces of coriander oil, anethol, anisic aldehyde and nonyl aldehyde. The subsidiary green-leaf odor may be imparted by carefully regulated amounts of phenylacetaldehyde dimethyl acetal.

Cyclamen. The odor of the cyclamen, most noticeable in nature in the variety C. Persicum odoratum evidently lends itself to considerably diverse interpretations. It suggests magnolia and hyacinths, with a strong background of Easter lilies. Some perceive lilac and white roses in it, and violets. The base should consist chiefly of hydroxycitronellal, together with cyclamen aldehyde and ylang, heliotropin, linalol, linalyl acetate, musk ketone, methyl ionone, rhodinol, phenylethyl alcohol, terpeneless lemon oil or citral, benzyl acetate or jasmin artificial, cinnamyl acetate and benzyl salicylate. A trace of benzaldehyde and a certain proportion of isoeugenol are also useful. Finally (to impart coherence and smoothness to this wartime dream) a little natural civet and a dash of aurantiol.

Hawthorn. Typically British, and appreciably less difficult to formulate, is the perfume of the may blossom, the exquisite almond-like odor of the hawthorn. Here, for general guidance, are two typical formulas devised by the late Felix Cola:

1.	Anisic aldehyde ex paracresol	500 g.
	Cinnamic alcohol, synthetic	200 "
	Acetophenone	50 "
	Linalol	50 "
	Ionone, 100 per cent	50 "
	Geraniol	75 "
	Terpineol	75 "
2.	Anisic aldehyde ex anethol	500 "
	Cinnamic alcohol	100 "
	Dimethyl hydroquinone	50 "
	Coumarin	25 "
	Methyl acetophenone	35 "
	Linalol	50 "
	Geraniol	140 "
	Ionone alpha	25 "
	Terpineol, rect	175 "

Water-Lily. We may well conclude this fantasy of odors with a glance at one of those complexes in which fruitaceous esters of the ethyl formate class may be utilized. The water-lily is a typical example. One of the best known water-lilies is Victoria Regia, which can always be identified by its huge leaves. Its fragrance is strongly reminiscent of pineapple and bananas, with a melon-like subsidiary note. Another botanical class popularly described as "water-lilies" is that of the Nymph-alaceae, which includes the lotus flower (nelumbium speciosum), called by the Chinese "lienhoa" and by the Hindus "lotus" or "tamara."

A *Lotus* perfume may be built up on the following lines:

Vanilla tincture, natural	375
Benzoe Siam tincture	375
Tuberose flower oil	375
Rose, synth., extra fine	150
Rose Centifolia	125
Cassie flower oil, synth	75
Civet, genuine, 3% tincture	75
Linaloe oil, Cayenne	75
Musk ketone	25
Orange blossom oil, synth	50
Cinnamic alcohol	20
Jasmin absolute, art	50
Ethyl salicylate	15
Almond oil, natural	7.5
Patchouli oil	10
Ethyl valerinate	5
Ethyl butyrate	5
Ethyl formate	2.5
Boronia absolute, Plaimar	2
Pineapple complex	3
Alcohol, pre-fixed	9000

C. H. Allen, Soap Perfumery Cosmetics.

NEW PERFUME OIL

United States buyers of perfume oils will probably welcome the news, currently reported in this country, that Mexico is producing a new kind of oil from *lima chicona.* This experiment may disclose a substitute for now scarce Italian bergamot.

During the latter part of 1941 and the first months of 1942 a lime oil factory in Colima processed about 1,500 pounds of what is known as Mexican bergamot cold pressed oil from *lima chicona,* grown principally in the states of Jalisco and Michoacan. A ton of *lima chicona* yields about 5 pounds of oil. Only small plantings of the tree have been made, however, and no immediate increase is anticipated.

HIGHER ALDEHYDES

The *Higher Aldehydes* can be used in soap perfumes if combined with the proper fixatives (according to T. Ruemele). Octyl aldehyde has an door similar to that of lemons or oranges. As a fixative for this aldehyde, oil of rue and methyl nonyl ketone are said to be suitable. These are similar to octyl aldehyde and need to be used in small amounts only. Nonyl aldehyde gives more of a flower-like odor, suitable for use in rose compositions. The fixative to be used can be chosen to accentuate some one desired effect. In rose compositions, geranium oil, styrax, cinnamic alcohol, and phenyl acetaldehyde dimethyl acetal are used. Methyl naphthyl ketone, cananga oil or terpeneless petitgrain oil give a neroli effect.

GRAY HAIR VITAMINS

Sex as well as vitamins may play a role in the gray hair problem, it appears from experiments reported by Dr. B. Gersel, of Yale University School of Medicine, and Dr. B. Lustig and Dr. A. R. Goldfarb, of the Lawrence Richard Bruce Biochemical and Research Laboratory, Stamford, Conn. (*Science,* Nov. 13).

When mice of the C-57 strain were kept on a diet lacking certain vitamins, gray hair developed in more than half of the surviving males but in only 6% of the surviving females within 30 days. Within 75 days all but one of the males had become gray, the scientists report, while 13% of the surviving females showed only slight changes in hair color. The same sex differences showed up in response to daily doses of para-aminobenzoic acid, calcium pantothenate and a combination of the two.

These findings, suggesting that gray hair produced by certain vitamin deficiencies may also depend on sex hormone factors, seem in line with the work of another scientist, Dr. T. R. Forbes, of Johns Hopkins University, who found that female sex hormone pellets implanted under the skin of white rats produced local darkening of their hair while certain male sex hormone pellets failed to do this.

SALICYLATE FUNGICIDES

Salicylates have been found effective means for combating the troublesome fungi that prey upon plants known collectively as the mildews. The fungus killing compounds are various salicylates, among which bismuth subsalicylate, benzyl salicylate and zinc salicylate have been found most promising when tried on blue-mold disease of tobacco, according to a communication from Dr. E. E. Clayton of the U. S. Department of Agriculture in *Science* (Oct. 16).

Discovery of the fungicidal value of these compounds was due to the war-caused shortage in copper salts, hitherto used in sprays for holding mildew and related diseases in check. The salicylates were found to be actually superior to the copper compounds for which they were supposed to be only substitutes. *Science News Letter.*

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ADVANCING THERAPY

UNCOMMON VITAMINS

Vitamins may be classified as those substances which have been identified as definite chemical compounds and those which are recognized as having vitamin activity, but whose chemical composition is not yet determined. There are 24 in the first group and 17 in the second group.

Niacin.—This name has been adopted for nicotinic acid and niacin amide is equivalent to nicotinic acid amide. Chemically, the acid is pyridine-β-carboxylic acid, and is prepared by oxidizing nicotine or by the oxidation of quinoline. It is a white crystalline substance readily soluble in water and alcohol. Aqueous solutions are stable and may be sterilized by autoclaving. Niacin is used in the treatment of human pellagra, in atypical psychotic states and for the relief of some of the untoward symptoms following administration of the sulfonamides.

Vitamin B_6.—This substance has been shown to be a pyridine compound; to it the name pyridoxine has been given. The hydrochloride is a white crystalline substance readily soluble in water, but sparingly soluble in alcohol. It is relatively stable to light, and solutions can be sterilized by heating at 120° for half-an-hour. It is important in some pellagra cases which do not respond completely to niacin, and doses have ranged from 10 to 100 mgm., either by the mouth or by injection.

Pantothenic Acid.—Probably this substance is identical with vitamin B_3. It may be of great importance in human physiology, but little clinical evidence has yet been collected. In pellagra cases, the blood level of pantothenic acid is subnormal, and when calcium pantothenate is given the patient's condition improves.

P-Aminobenzoic Acid.—Last year this compound was identified as a vitamin which cures or prevents the greying of the fur of rats and it promotes growth in the chick. It has also the property of inhibiting the action of sulfonamide compounds. There is evidence that it has a therapeutic effect in some patients suffering from asthma.

Inositol.—It was shown two years ago that rats and mice require this compound for normal growth and the maintenance of hair. No evidence regarding human requirements is available.

Biotin.—Another name for this bios is vitamin H, and although an empirical formula has been determined, its exact structure is not known with certainty. Claims have been made that acne and other skin conditions have improved after treatment and that baldness of a seborrhoeic type, as well as psoriasis, have responded. Results have been obtained in man with doses of only 150 to 300γ per day.

Vitamin B_8.—This substance is now thought to be either adenylic acid or its degradation product, adenine. Part of its claim to vitamin activity is in the fact that it is necessary for the growth of lactic acid bacteria, and clinically it appears to increase the effect of niacin in pellagrins.

Vitamin K.—There are at least two and probably more substances with vitamin K activity naturally occurring in plants and bacteria. These and a large number of active synthetic compounds are all naphthoquinones. Both vitamin K_1 and K_2 can be estimated by spectroscopic, chemical and biological methods. They are necessary for the maintenance of normal blood coagulation. The naturally occurring vitamins K are non-toxic, but some of the substitutes are toxic if given in large amounts. In therapeutics doses of 1 to 10 mgm. of 2-methyl-1 : 4-naphthoquinone have been recommended.

Vitamin P.—Another name for this substance is citrin. Concentrates of differing activity have been obtained from citrous fruits, black currants and other sources. They contain hesperidin, a glycoside of a flavanone, and while this has some activity, it is weak in comparison with the concentrates. A method of determining citrin depends upon its effect on capillary fragility and permeability. Doses of 50 to 150 mgm. of the concentrates have been given.

Vitamin J.—Also called vitamin C_2, it has been suggested that this compound prevents pneumonia in guinea pigs. Ascorbic acid has no such protecting influence, but the J factor seems to be present in lemon juice, rowan berries, elderberries and black currants. No studies have been made on man, but it would appear worthy of investigation, for a proportion of pneumonia patients do not respond to chemotherapy.

Vitamins L_1 and L_2.—These two lactation factors, the former occurring in liver and the other in yeast, are different from any of the other vitamins.

Vitagens.—A group of the fatty acids, linoleic, linolenic and arachidonic, formerly called vitamin F, open a new field in dietetics. They are not vitamins, since they are used in the body as energy transformers and as building units for phospholipoids even when present in the diet to not more than 0.1 per cent.

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Methyl Groups.—It has been shown that the transfer of methyl groups occurs in the synthesis of creatine and it has been concluded that this transferable methyl group is an essential dietary constituent. Its sources are choline, betaine and methionine as well as other possible compounds. In experimental animals deficiency of these substances produces, among a number of other symptoms, a fatty liver and haemorrhagic necrosis of the renal cortex. Interesting lines of research are here indicated.

ALCOHOL DIURESIS

Eggleton determined the diuretic action of alcohol and its mode of action by simultaneous analysis of the concentration of alcohol in the blood and urine of 5 subjects. The diuresis following an alcoholic drink was roughly proportional to the amount of alcohol present when volume and other constituents were maintained at a constant level. Variations in external temperature seriously affected this relationship; that is, cold caused a greater diuresis. Its onset was delayed for twenty to thirty minutes after the drink was taken, and its height was unrelated in time to the peak of blood-alcohol concentration. The diuresis could be completely inhibited by solution of posterior pituitary. It was initiated by the increase in blood-alcohol concentration and failed to be maintained if this concentration was kept steady, even at a high level. The degree of diuresis from a given dose of alcohol varied widely in different subjects and was dependent on the natural rate of absorption of alcohol and water and possibly on a variation in the sensitivity of the pituitary mechanism. The diuretic response to alcohol and that of the cerebral cortex differed in one respect: the latter was most affected by the rate the concentration of alcohol in the blood was increased. The greater this increase was, the greater was the disturbance of function at any absolute concentration; but with the diuretic response the duration of the increase and not the rate of increase was important. When an equilibrium has been established in the body the concentration of alcohol in the urine remains 30 to 35 per cent higher than that in the blood. Comparison of these values with the arterial and venous blood and plasma indicated that the alcohol in the urine was in equilibrium with that in the water of plasma. *J. Physiol. vol. 101, p. 172.*

IMPROVED VACCINE

A step toward development of a more powerful anti-typhoid fever vaccine has been taken in research by Dr. Jules Freund, New York City Health Department Bureau of Laboratories. Results so far of Dr. Freund's work on both typhoid and diphtheria are announced in the first annual report of the Public Health Research Institute of New York City by Dr. Otto A. Bessey, director of the Institute.

By injecting killed tuberculosis germs and lanolin-like substances into animals, Dr. Freund has discovered, their production of typhoid fever-fighting antibodies is increased in response to invading typhoid germs.

"In a way, this means production of a more potent vaccine against typhoid," Dr. Thomas Rivers, director of the Hospital of the Rockefeller Institute and now Commander in the Medical Reserve Corps, U. S. Navy, as well as chairman of the Institute's scientific council, explains.

"Whether this method actually gives a more potent vaccine for protection of people against typhoid fever, however, cannot be stated until field experiments have been made."

CHEMOTHERAPY OF TUBERCULOSIS

Barach and his associates repeated the experiments of Feldman, Hinshaw and Moses, who reported that the sodium salt of p,p′-diaminodiphenylsulfone-N, N′-didextrose sulfonate had an inhibitory effect on the development of experimental tuberculous infection in guinea pigs. Slight variations in the procedure showed that the oral route did not offer as great a concentration of the drug in the lungs and a lower concentration in the blood as did local application of the nebulized spray of the compound. The inhalation of the nebulized spray had a deterrent influence on the development of generalized tuberculosis in 22 of 28 guinea pigs as compared to 10 infected, untreated control animals. Of 16 animals treated by inhalation, 13 survived for the eighty-four days of the experiment, whereas the 14 animals given the compound by mouth and the 17 untreated animals did not survive beyond the seventy-fifth day.

Zucker and his co-workers administered the sodium salt of p,p′-diaminodiphenylsulfone-N,N′-didextrose sulfonate to 12 tuberculous patients by the continuous intravenous drip method. Objective evidence indicated that on bed rest there was progression in 8, no change in 1 and slight improvement in 3. Bed rest was continued in each while the compound was administered. It is the author's contention that the drug as given is ineffective against clinical tuberculosis. Their clinical observations are at variance with the successful results in tuberculous guinea pigs. The discrepancy should serve to emphasize again the difficulty of translating laboratory into clinical experience. *Amer. Rev. of Tuber. vol. 46, p. 268.*

IRRADIATED BLOOD

Miley injected into 71 patients with peritonitis blood that was irradiated with ultra-violet. Of 39 with generalized peritonitis 32 recovered: 100 per cent of those with moderately advanced peritonitis and 53 per cent of those who were apparently moribund. Signs of early detoxification appeared within an average of thirty-four and five-tenths hours after initial irradiation; the average complete detoxification time was eighty-one and three-fourths hours. Twenty-nine patients received one, 6 two and 4 more than two treatments. Ultraviolet blood irradiation was used to control infection of 20 with localized peritonitis and appendical abscess; 17 recovered; 100 per cent of those with moderately advanced infection and 75 per cent of the apparently moribund. The average early detoxification was apparent in twenty-four and seventy-one hundredths hours and complete detoxification in fifty-two and ninety-four hundredths hours. Fifteen patients had one irradiation, 4 two and 1 more than two. Of the 12 patients with severe pelvic peritonitis accompanied by multiple pelvic abscesses 9 recovered: the 3 in whom the peritonitis was moderately advanced and 67 per cent of those who were moribund. Detoxification was apparent in fifty-four hours; complete detoxification occurred in 10 patients at an average of ninety hours. Five patients received one, 6 two and 1 three irradiations. There were 14 deaths; all occurred among the 33 apparently moribund patients. *Arch. Phys. Ther. vol. 23, p. 536.*

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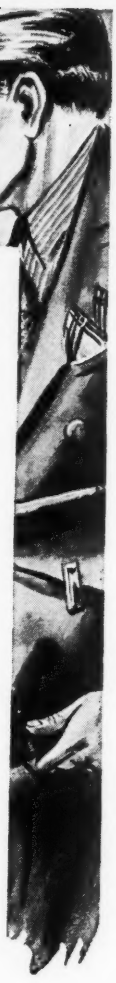

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READERS' QUESTIONS

HAND LOTION: We would appreciate a formula for an almond hand lotion. We have been experimenting with one but cannot seem to avoid separation in the product. The water stays on the bottom and the other ingredients rise to the top. Milwaukee.

Without having looked at your formula we suspect that your trouble is caused by a lack of an effective preservative. We hope that our insistence on preservatives in all cosmetics using vegetable substitutes will some day bear fruit. Try this: stearic acid 3.15, glycerin 5, triethanolamine 1, almond oil 5, alcohol 5, gum tragacanth powder 1.5, formaldehyde 0.15, perfume 0.25, water 78.95. This makes a 100 parts by weight. Melt the stearic acid with the oil. Mix the triethanolamine and glycerin with half the water and heat to the same temperature. Rapidly stir in melted fats. Warm the rest of the water, stir in the tragacanth which has first been dispersed in the alcohol. (The perfume should be mixed with the tragacanth and alcohol). Then slowly pour this mucilage into the basic emulsion, while stirring the latter very rapidly. Finally stir in the formaldehyde.

HAIR DRESSING: For past fifteen years we have manufactured a liquid hair dressing composed of 75% S.D. alcohol No. 40 and 25% Castor Oil Odorless. Thus far, we have had no difficulty in obtaining alcohol but lately we have been unable to buy any castor oil for use in toilet preparations. Is there any substitute that can replace castor oil in making a liquid hair dressing? Toledo.

We have checked several possibilities but unfortunately have found them to be of no use for your purpose. Neatsfoot oil, peanut oil, sunflower seed oil, are all insoluble in alcohol. A liquid fatty alcohol, oleyl alcohol, would undoubtedly be a very effective substitute for castor oil but the restrictions on it are just as great as on the castor oil. Finally, hydrolyzed linseed oil has been suggested as an alcohol soluble substitute for castor oil. It, however, has an odor of linseed oil, which is difficult to remove or cover.

PERFUME RESIN SOLVENT: I would appreciate it if you could kindly inform me of the best way to dissolve or melt oppoponax, olibanum or other resins in preparation for their use in perfumes. Boston.

Perfume resins of the type you mention are prepared for use as fixatives by extracting the crude material (by percolation or maceration) with a suitable solvent such as alcohol, isopropyl alcohol, acetone, etc. The extract is carefully filtered and the solvent removed by evaporation. In your case, if you do not wish to undertake the evaporation, extraction should be done with good quality ethyl alcohol and the solution carefully filtered. To be sure of the concentration of the resulting solution, it is advisable to weigh a small portion, evaporate to dryness and weigh the residue to determine the proportion of resin in the solution.

SHAMPOO: We have an oil shampoo which may be classified as a soft soap. It does not contain any vegetable or mineral oils and no alcohol. What should be added to this shampoo to give additional gloss to and also prevent snarling of the hair. We now use 2 per cent. of glycerin, but find that this is not particularly useful. Minneapolis.

About 2 per cent. of mineral oil added to the shampoo should serve your purpose admirably. This amount of oil will leave the hair lustrous and manageable and should not affect the clarity of the soap solution. The method by which this oil is added to your product will depend largely upon your manufacture. If you start with a soap jelly which is merely mixed with enough water to make the required solution, the oil should be mixed with some of jelly beforehand, with the use of heat if necessary. In manufacture starting with oils which are then saponified by alkali, the mineral oil should be mixed with the original oils. It may be necessary to add a small amount of alcohol, or the ethyl ether of diethylene glycol, to keep the solution completely clear if the soap alone is unable to do so.

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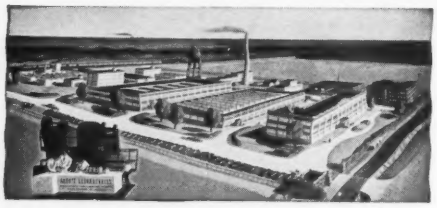

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STAINLESS TAR: What tar product is best to use in an ointment for treating various types of dermatitis? I am making a tar vanishing cream using oil of cade but it has not been satisfactory. I should appreciate information as to another product; naturally the less color the better. In addition, what type of sulfur can I use in the vanishing cream that will not be gritty? Cleveland.

Recently a synthetic coal tar has been devised by dermatologists and pharmacists from the University of Pittsburgh, School of Medicine. The formula for their product is as follows:

Anthracene	1.10
Naphthalene	10.90
Penanthrene	4.00
Carbazole	2.30
Picolene	0.58
Pyridine	0.58
Quinoline	0.58
Phenol	0.70
Cresol	0.75
Petrolatum to make	100.00

This synthetic tar may be used in various preparations in the same amounts as crude coal tar.

The most active form of sulfur is colloidal sulfur. If you don't wish to use this, you may try flowers of sulfur, which is a fine powder without grittiness.

UNSTABLE CREAM: We manufacture an ointment having the following ingredients: lanolin, spermaceti, beeswax, borax, water, calamine, zinc oxide, boric acid, mineral oil and perfume oil. On standing this develops a grainy appearance. The cream rubs out smooth but does not look well. Can you suggest any improvement? Philadelphia.

There are several incompatibles in your mixture, so that reaction takes place after the cream has stood for a while, with the development of graininess. Your base is a heavy cold cream type with a large proportion of lanolin and little water, so that it is probably a water-in-oil instead of an oil-in-water emulsion. The borax, however, promotes the formation of an oil-in-water emulsion and merely promotes instability. Zinc oxide and boric acid will tend to combine and form insoluble zinc borate. Moreover, zinc oxide will combine with the borax to form zinc borate. Your formula should be considerably improved by the omission of both borax and boric acid. If you must keep the boric acid, however, just the omission of the borax should result in some improvement.

ROUGE: We have had a great deal of trouble making rouge. Our formula calls for talc, gum arabic, and lake coloring matter, all of which are mixed into a stiff paste. This we spread on a twelve cavity mold and press. Something must be wrong with our process for upon taking the mold out of the press, we found ourselves unable to remove the cakes. Inasmuch as this is a new product with us we would be very much indebted to you for any assistance that you may be able to give. Melbourne, Australia.

We don't wonder that you got into difficulties; your formula and procedure are all wrong. To the amount of talc you use, you should add zinc oxide or else your rouge, if you do succeed in making it, will be transparent. Also, add purified kaolin. Gum arabic is likely to produce a cement-like rouge, so in its place, we suggest powdered tragacanth or pulverized paraffin. The proper procedure is to mix the ingredients and the color. Then wet the gum with sufficient water to convert the whole batch into a semi-fluid paste. Spread this thinly on drying trays and put into a controlled temperature oven and dry at about 130° F. When the mass is thoroughly dry—after a period of approximately twenty hours, depending upon the construction of the oven—remove the dry mass and pulverize it in a ball mill or pulverizer. Then granulate the powder with the perfume solution (alcohol and perfume) and press into cakes. You'll have to do quite a bit of experimenting to get the rouge just right. Few cosmetic manufacturers make their own rouge, generally preferring to buy it and save themselves endless troubles.

SURGICAL JELLY: We desire to manufacture a surgical lubricating jelly of the tragacanth type. Can you supply us with formulas? Are there any new gums that may be used? Are there any "mineral" jellies that may be used for this type product? New York City.

Lubricating jellies consist of one to three per cent. of tragacanth in water with a preservative. Tragacanth jellies are usually made by mixing the required amount of pure white powder with a small amount of alcohol and pouring the suspension into water while stirring. Alternatively, tragacanth flakes may be swelled overnight with cold water and then heated until the solution is clear. The major problem in the preparation of surgical jellies however, is absolute sterility and it is quite possible that the presence of alcohol will not be acceptable because of the possibility of irritation.

Karaya is occasionally used in place of tragacanth because of its lower cost. Newer gums require physiological testing before they can be accepted for this use. Mineral jelly similar to liquefying cleansing cream consists of paraffin 20, petrolatum 20, and mineral oil 60, but it seems unlikely that this would be acceptable because it would not mix with water or aqueous secretions.

CONCENTRATED MOUTH WASH: I wish to make a concentrated mouth wash consisting of a high proportion of essential oils and antiseptics dissolved in alcohol. A few drops of this solution are to be poured into water for use. A milky solution is supposed to result but the solutions I have tried all soon show a separate top layer of oil. Since this results in non-uniform dilution with probable uneven antiseptic action, will you please tell me how to prepare a mixture that will give a reasonably stable emulsion. Chicago.

The highly insoluble oils used in your mixture will naturally separate out when the alcohol used to dissolve them is substantially diluted with water. Just as naturally, the globules first formed will coalesce to form an oily layer unless some means is provided to keep the droplets in their original form. An emulsifying agent must be present in the solution to prevent this coalescence. Sulfonated castor oil should serve your purpose well and triethanolamine oleate has successfully served the purpose. These suggestions are modifications of formulation methods used successfully for bath oils, where the same problem enters. We cannot tell you the exact proportions of emulsifier to use since this depends upon the type and amount of insoluble oils used. Too much emulsifier must be avoided, as a completely transparent solution in water might result. Mix the active ingredients with the emulsifier and then dissolve in alcohol. A little experimenting with varying quantities of dispersing agent or emulsifier will soon lead to the correct proportions necessary.

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PURCHASING DEPARTMENT

NOVEMBER MOVEMENTS

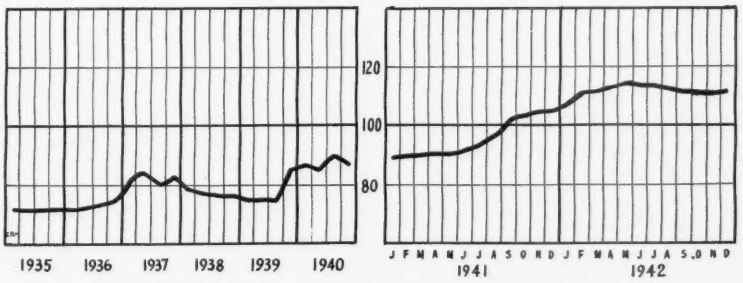
Up

Asafetida 10c	Cedar leaf oil 10c	Pimento berry oil 25c
Balsam Peru 10c	Cumin seed, Morocco 1c	Leaf oil 50c
Cajuput oil 10c	Golden seal root 60c	

Down

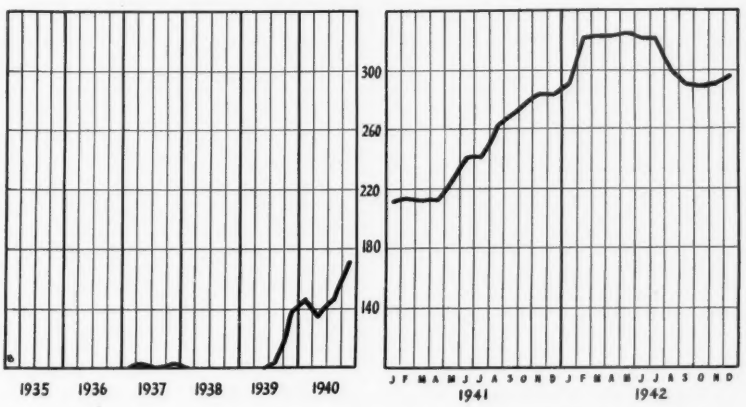
Almond oil sweet 30c	Coriander oil $5	Saffron Amer. 7c
Balsam Copaiba S. A. 6c	Cubebs oil 25c	Spearmint oil 10c
Beeswax, white 1c	Dill oil 50c	Stramonium leaves 1c
Belladonna leaves 5c	Elder flowers 6c	Styrax genuine USP 10c
Bois de Rose, Braz. 25c	Geranium Bourbon $2	Tansy oil 10c
Caraway oil 25c	Grape fruit oil 10c	Vetivert oil Java $6
Carnauba wax #1 15¾c	Henbane leaves 5c	Wormseed oil 5c
Cassia oil, redist. 25c	Lime oil dist. $2.25	
Celery oil $5.	Orange oil, Amer. Cold Pr. $1	
Chamomile flowers Hung. 1c	Amer. dist. 70c	
Clove oil 5c	Rosemary oil 15c	

25 Cosmetic Raw Materials—Unweighted Price Index. 1926=100.



The cosmetic raw materials index advanced to 111.7 from the previous 110.8. Balsam Peru was up 10 cents to $1.35; beeswax dropped 1 cent to 57 cents; whereas candelilla wax was offered at the new schedule of 44 cents. While most crude beeswax is now obtained from Brazil, African material may be available in quantity later on as the shipping situation in the Mediterranean improves.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index advanced to 296.3 from the previous 289.6. Cascara rose to 26 cents a pound; belladonna dropped 5 cents to $1.80. Activity in the market during late trading mainly took the form of conversation regarding what, if anything, may be the result of the conference in this city on November 18th between representatives of the New York City botanical drug trade and employees acting for the Office of Price Administration. No details yet.

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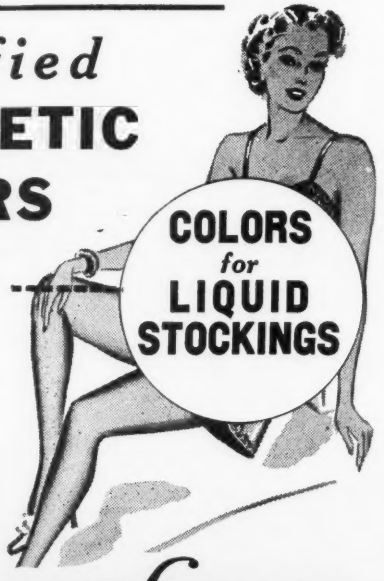

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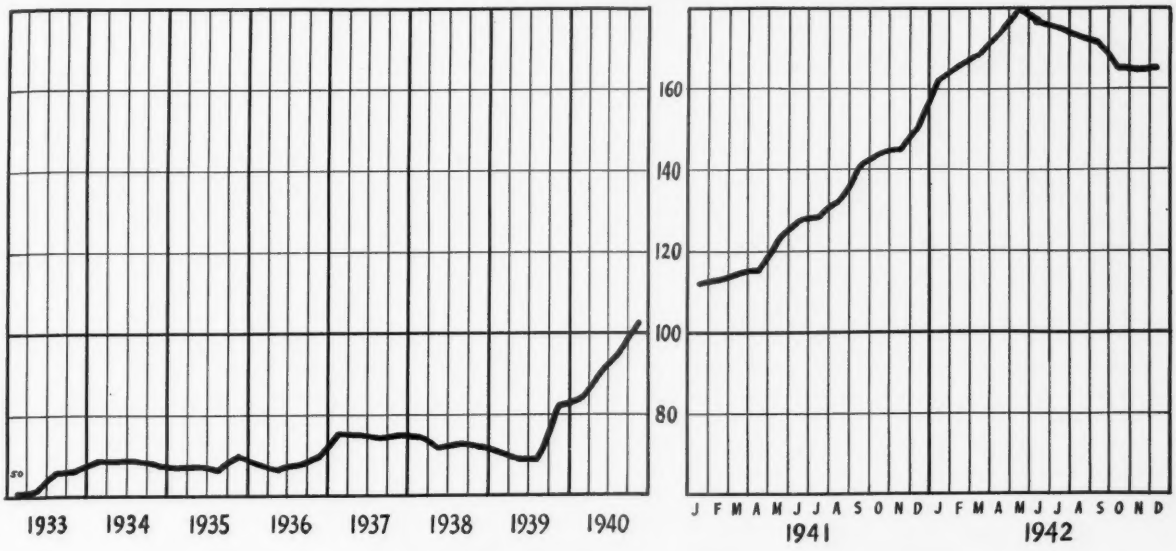
50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for November, 1942 advanced fractionally to 164.4 from the previous 164.1. The market as a whole was spotty during the period under review. Essential oils continued in small demand, botanicals held steady, whereas the demand for medicinal chemicals was good and the price position quite firm. Developments in the African war theatre spotlighted the possibility of a resumption of shipments of many commodities from that area.

• Prices quoted in this section were current on the first of this month.

SHARKLIVER OIL

Producers of sharkliver oil on the Pacific coast report the possibility of a squeeze, or at least a tightening of the market for this product by next Spring or Summer.

Stocks of sharkliver oil in producers' hands are known to be quite sizable but production is said to be at a stalemate, and the big run of sharks off the coast, common usually at this time of the year, is going unharvested because of the poor market for livers. Most authoritative estimates say that shark fishing is off 85 per cent. at least.

It is pointed out that consumers last year purchased far beyond their needs in a market that was skyrocketing and rapidly getting out of control. Then government regulations which limited the use of vitamin A oils in effect practically doubled these heavy consumer inventories. The result was a complete paralyzing of trade during which time producers' tanks bulged, and many of them have been bulging since. The market dropped rapidly with extremely severe losses among producers who were faced with large supplies of oil on hand, made from high-priced livers.

But today the market is faced with the fact that built-up inventories of consumers are being depleted, and many of them must come back into the market before long. And because the Fall run of sharks off the California coast is not being fished, producers anticipate a shortage by next Spring and Summer when the sharks can't be had.

The offsetting feature, however, is the supply of Mexican livers which may come in sufficient volume when needed.

WAXES

The Office of Price Administration on November 7th established definite dollars-and-cents price ceilings on beeswax, candelilla, carnauba, and ouricury waxes, ending at a stroke of the Henderson pen all the uncertainty that had beset wax dealers for months.

To a substantial extent the new ceilings, effective November 13th, offset price increases of the past two years and hold quotations for most of the important types sold in the United States at levels prevailing in October, 1941. Hitherto, ceilings were established by the General Maximum Price Regulation at levels of last March. March prices, however, reflected increases of from 60 to more than 100 per cent. since the fall of 1939.

On beeswax, prices established on crude material ranged from 37½c to 44c per pound in quantities of a ton or more, according to source of supplies and on the basis of wax being non sun-bleachable or sun-bleachable. The schedule was set up on bricks, discs, slabs, rounds and squares.

Terms in the order define "beeswax" as including the following commercial grades of any wax excreted by bees; imported sun-bleachable, non-sun-bleachable and African; and domestic crude, light capping, refined and bleached.

On candelilla wax, ton lots or more of crude were 38c per pound; and refined, 44c.

"Candelilla wax" is the product of the candelilla weed (euphorbia antisyphilitica).

On carnauba wax the usual trade designations of quality were adopted and the price of lump or flake material ranged from 71¼c to 83¼c per pound on the basis of ton or more quantities and according to quality.

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"Carnauba wax" includes all commercial grades of the exudation product from the leaves of the carnauba palm tree (corypha cerifera) grown in Brazil and adjacent South American countries.

All prices were f.o.b. New York City. Schedules on quantities from one pound up to a ton were set up on the basis of differentials chargeable over the basic quotations on ton lots or more. "One ton" means 2,000 pounds.

OPIUM

Favorable report was voted by the senate finance committee November 25 on the Doughton bill (H. R. 7568) to tighten the government's control over narcotics by authorizing the Secretary of the Treasury to license the growing of opium poppies in the United States. The senate is expected to pass the bill shortly.

The main purposes of the legislation is to set up a control system around the growing of poppies so that the growers will be required to harvest the straw or stalk of the plant from which morphine is extracted because of the heavy needs of the armed forces for the drug.

ROTENONE

A government program for the purchase and importation of rotenone from Brazil and Peru to be carried out by Commodity Credit Corporation has been announced jointly by the U. S. Department of Agriculture and the Board of Economic Warfare. Officials hope to import at least 4,500,000 pounds of the insecticide during the next 12 months to help make up for the reduction in imports resulting from Japanese invasion of Singapore and to facilitate increased truck crop and livestock production.

Under the plan, the CCC is the exclusive purchaser of all rotenone-bearing roots having a rotenone content of not less than 3 per cent. Purchases will be made through existing commercial companies acting as agents for the CCC, so as not to disturb normal business channels. Sales of stocks acquired under the program will be made upon approval of the WPB at prices not in excess of those established by the OPA.

OLIVE OIL

Olive oil demand, especially for U.S.P. grades, continued good during the current trading period. However, despite the fact that the supply of the fine domestic grades is well nigh exhausted, dealers still displayed considerable hesitancy about buying the more expensive imported oil.

War developments in the Mediterranean will determine whether imports from Tunisia and Algiers will be augmented or shut off altogether, trade sources feel. In connection with shipments of food from North Africa, the Office of War Information stated that because the Nazis have stripped North Africa of its own agricultural products, emergency purchase of a limited quantity of vegetable oils will be made to help the area tide over until the next harvest. Imported oil held at $4.60 to $4.75 a gallon, in duty paid drums. California oil brought $4.10 to $4.20 a gallon.

Producers and exporters in the vicinity of Seville estimate that from 200,000 to 275,000 metric tons of edible olive oil will be produced in Spain in the 1942-43 season. Production was officially estimated at 320,000 metric tons in 1941-42, although in some trade circles output is thought to have been somewhat larger. Sulfur oil production would be about 10 per cent. of the foregoing figures.

The below-average output anticipated for 1942-43 is based on the facts that olive trees usually yield a light crop following a good one and that rainfall during the spring of 1942 was light. Disease has not been apparent, and fly bites, if any, have been on a small scale. The quality of the olives is reported to be good.

Unallocated stocks of olive oil from previous harvests are estimated at from 40,000 to 70,000 metric tons, and stocks of sulfur oil are estimated at from 8,000 to 10,000 metric tons.

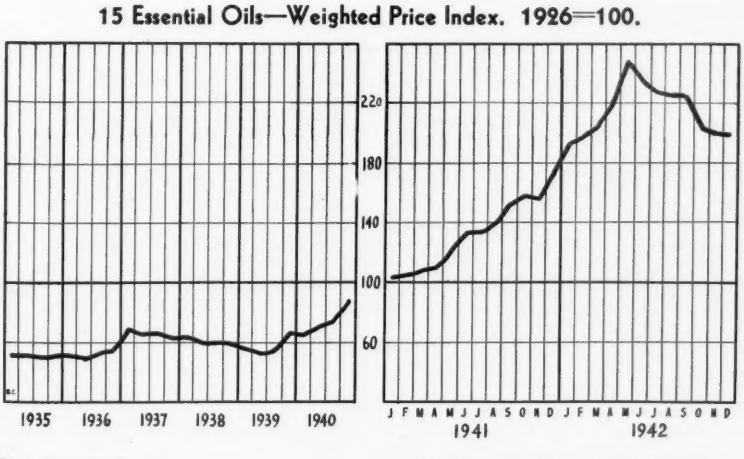
VANILLA BEANS

Because present ceiling prices for vanilla beans do not make adequate provision for additional costs of small lot transactions, the Office of Price Administration announced November 27th that primary dealers and wholesalers may charge premiums on sales of 50 pounds or less.

Under amendment 65 to Supplementary Regulation No. 14 of the General Maximum Price Regulation, effective December 2, 1942, importers or primary dealers are allowed a one per cent. premium over the specific maximum prices. Premiums permitted in both instances, it was emphasized by OPA, apply only to sales of 50 pounds or less and may be added to the established ceiling price provided under amendment 35 to S. R. 14.

Resales by wholesalers usually are made to bakery supply houses or hotels, who make their own extract, or to consumers. The additional charge for small quantity sales covers repacking, marketing and distribution expenses.

15 Essential Oils—Weighted Price Index. 1926=100.



The essential oil index declined to 199.0 from the previous 200.1. Bois de Rose dropped 25 cents to $4.25; cananga declined to $15 a pound; cassia oil was lower at $10.25, and clove oil was reduced 5 cents to $1.70. Another trading period passed without this group of commodities showing the least indication to improve as far as consumer demand was concerned. The situation was attributed to heavy consumer stocks and curtailment of consumer production.

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ALCOHOL

The demand for industrial alcohol, despite the switchover of 60 distilleries to industrial production, has been so great that new alcohol plants will have to be constructed in 1943, Dr. Walter G. Whitman, assistant chief of the Chemicals Division of the War Production Board, declared.

Indications that alcohol will not be in more plentiful supply for toiletries were provided by Dr. Whitman who said that a survey of the supply and requirements indicates that "distillers must continue without vacation to produce industrial alcohol at maximum capacity for some time to come."

Thus far, Dr. Whitman said, 45 beverage plants have completed conversion programs and are now producing industrial alcohol which is being absorbed by war requirements.

Plans have been made for the conversion of 9 additional plants during November, adding 1,000,000 more gallons to the total monthly production. By the end of March, the conversion program is expected to result in 19,000,000 gallons from converted beverage distilleries.

According to Gordon McBride, committee secretary of the Wheat Alcohol Research program, conclusions regarding the usefulness of wheat for conversion to alcohol would be available within the next two months.

GLYCERINE

Production of glycerine is continuing at a good rate but trade factors fear that there will be a sharp decline in production over the coming year. Less fats will be available in 1943, and with no lauric acid content oils available it is generally feared that the output will receive a severe setback in the months ahead.

OPA is now negotiating with refiners for a drawback of 1½c on refined glycerine sold to Federal agencies. It is said that the new prices will be f. o. b. the plant rather than on a delivered basis. The synthetic rubber program will require approximately 100,000 pounds of soap although less has been said of this prospective demand in recent weeks than a month ago.

CITRATES

Because of the situation in citric acid it has been necessary for producers to include the important derivatives in the same allocation program. It is hoped that civilian requirements for November and December, 1942, can be supplied on the basis of 50 per cent. of purchases of the following items for the same months of 1941: sodium citrate USP; sodium citrate VIII revision; potassium citrate USP; iron and ammonium citrates USP brown and green.

MOROCCO

American armed forces in Morocco has directed attention to the possibility of resuming export business in botanicals characteristic of that area of Africa. Ships supplying American forces now ruling the south shore of the Mediterranean Sea must return to the United States for more war supplies for those forces. Returning ships could load Moroccan products instead of returning in ballast.

United States commerce in Moroccan seeds was always substantial. Canary, caraway, cumin, coriander, fennel, and fenugreek are some of the items formerly imported in quantity and there should be a ready market here for replacement stocks. Also, the returning ships might load pale rose petals, horehound herb, and other crude drugs common in the Morocco trade.

Excepting Spanish Morocco, the whole north coast of Africa is controlled by the United States. Ships that could bring back commercial cargoes will be there. At least, the opportunity to resume commerce with Morocco exists.

Morocco is said to be well adapted to the growing of a variety of medicinal herbs and plants, because of diversity of climate and soils and a plentiful supply of native labor. Among the principal herbs grown are belladonna, chamomile, coriander, bugwort, digitalis, seagrapes, eucalyptus, gentian, mint, passionflower, thyme, and valerian.

As an indication of the extent of the Moroccan trade in botanicals, exports in 1941 to France alone amounted to 70,000,000 francs, and it is expected that the figure would have reached 100,000,000 francs in 1942. There is a possibility that this volume of botanical material may be diverted to the United Nations next year.

Some difficulties are encountered in collecting and transporting the herbs in Morocco. Producing regions are chiefly in southern Morocco, far from railways, and goods must be carried by camel or mule caravan, a slow and expensive method.

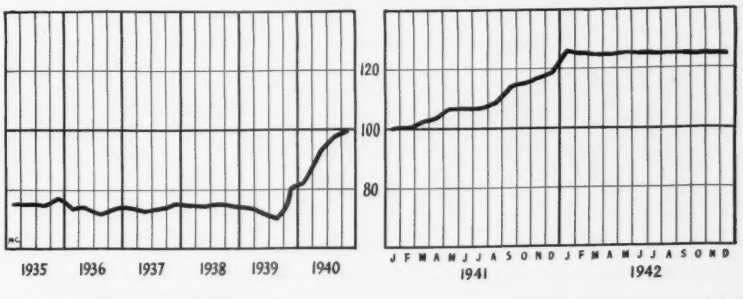
To improve the product for export, an association is proposed to set up standards, to remedy unfavorable growing conditions, and to regulate prices paid to growers, collectors, and brokers.

ACID ASCORBIC

Acid ascorbic prices were reduced 25c per oz. during the current trading period and are now offered in 1 oz. bottles at $1.20 per oz.; 5 oz. bottles $1.12 per oz.; 25 oz. bottles $1.07 per oz.; and 50 oz. bottles $1.04 per oz.

The medicinal chemicals index again failed to show a change, the index figure continuing at 124.4. Demand for drugs and fine chemicals carried on at high speed and involved large quantities of all sorts of materials needed heavily to meet the program based on armed forces requirements. This business was buttressed by a very substantial need in the way of civilian necessities.

15 Medicinal Chemicals—Weighted Price Index 1926=100.



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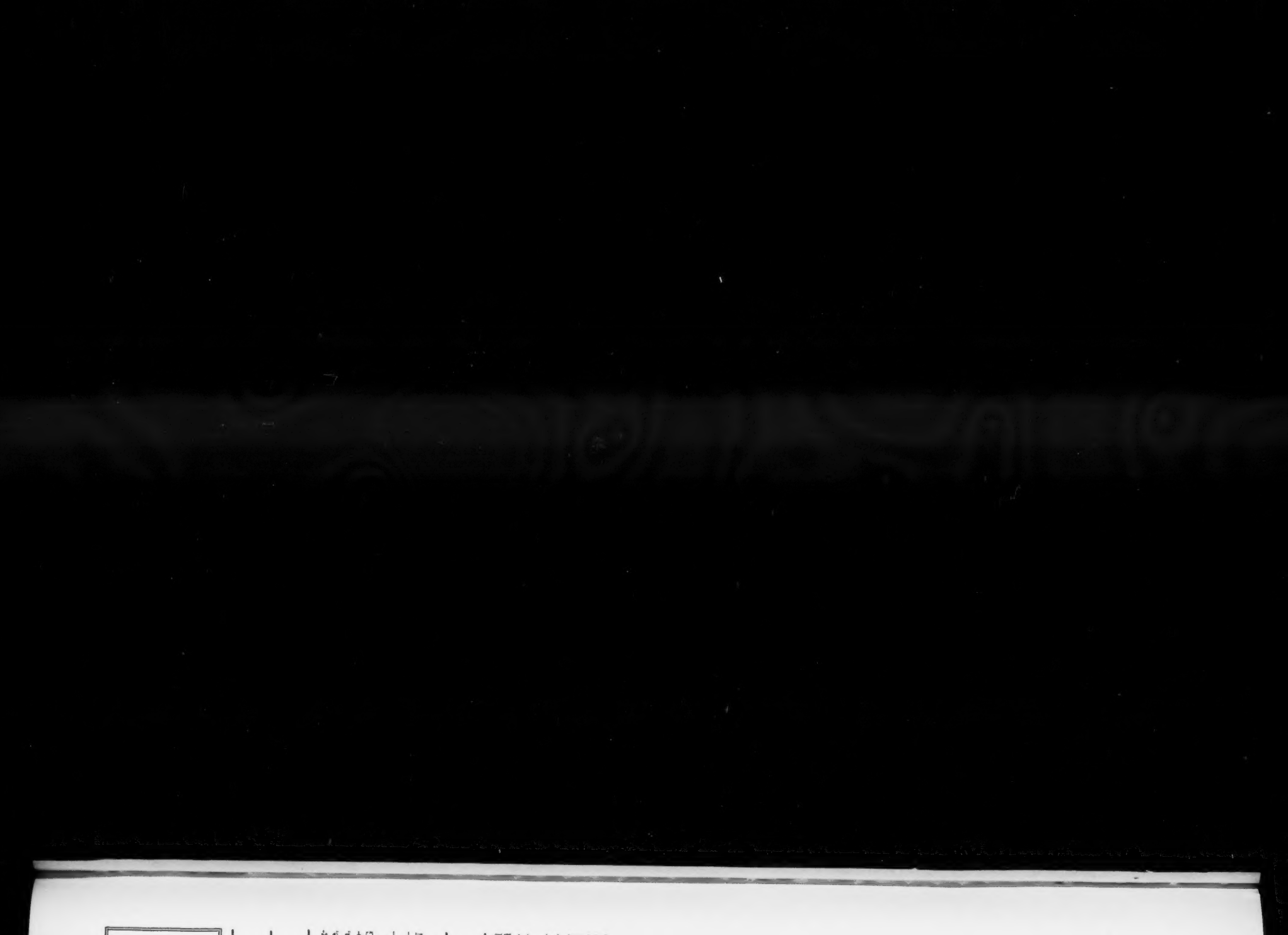
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